Comprehensive Annual Financial Report

for the fiscal year ended June 30, 2018

Education for Today, Retirement for Tomorrow

Missouri Public Schools and PSRS/PEERS

PSRS/PEERS

PUBLIC SCHOOL & EDUCATION EMPLOYEE RETIREMENT SYSTEMS OF MISSOURI

Comprehensive Annual Financial Report

for the fiscal year ended June 30, 2018

Education for Today

Our public school districts proudly provide Missouri's students with the best possible education and learning environment. They work hard and smart to meet the challenge of keeping facilities, technologies and course offerings up-to-date and meet the ever changing needs of today's students.

M. Steve Yoakum
Executive Director

Prepared by PSRS/PEERS Staff

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3210 W. Truman Blvd.
Jefferson City, MO
65102-0268
(573) 634-5290 or
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www.psrs-peers.org

Cover photo of Missouri public schools by Renette Reiske.

PSRS/PEERS

PUBLIC SCHOOL & EDUCATION EMPLOYEE RETIREMENT SYSTEMS OF MISSOURI

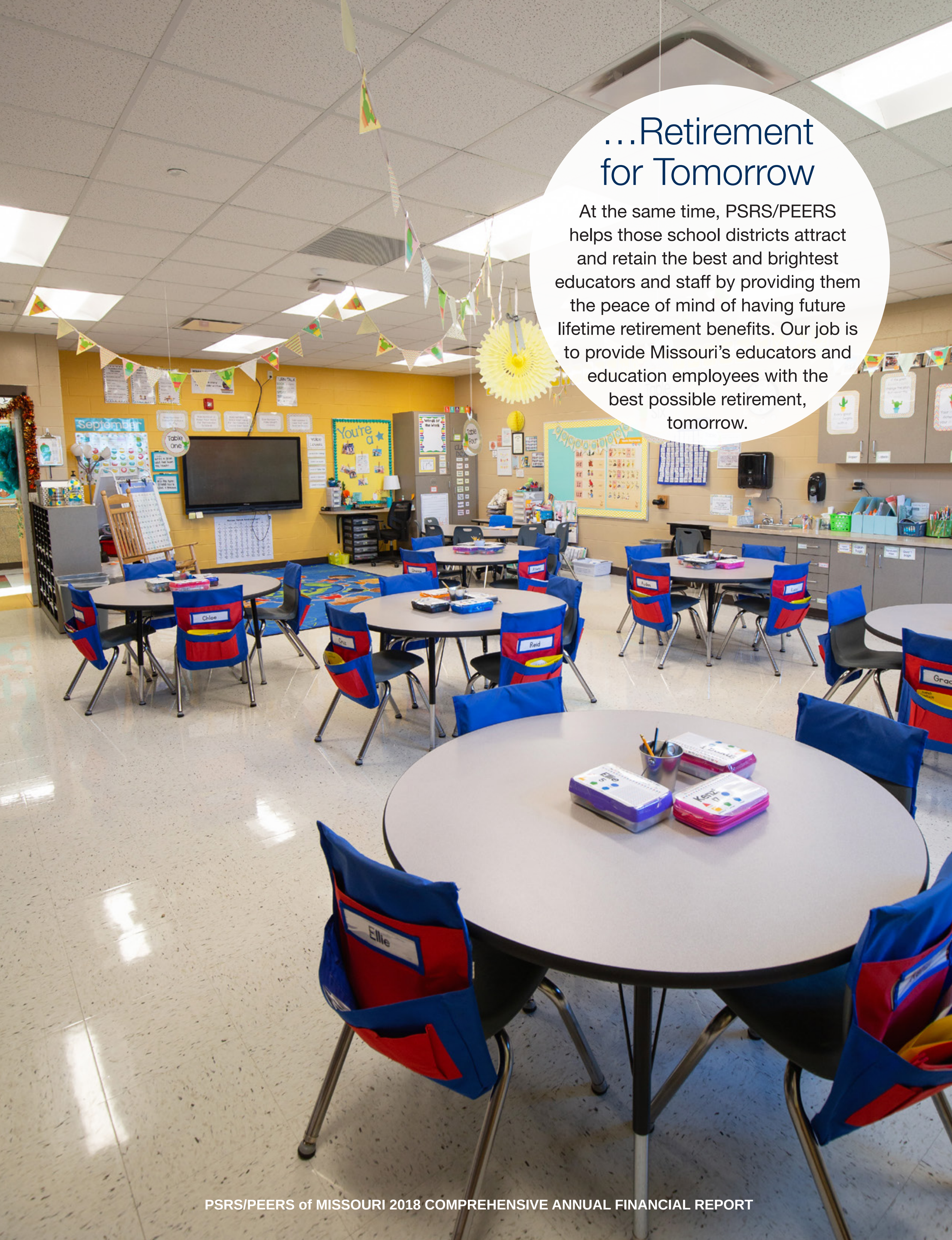
INTRODUCTORY SECTION

FINANCIAL SECTION

INVESTMENT SECTION

ACTUARIAL SECTION

STATISTICAL SECTION



…Retirement for Tomorrow

At the same time, PSRS/PEERS helps those school districts attract and retain the best and brightest educators and staff by providing them the peace of mind of having future lifetime retirement benefits. Our job is to provide Missouri's educators and education employees with the best possible retirement, tomorrow.

Introductory Section

Mission Statement, Goals, Focus Areas

MISSION STATEMENT

The Public School Retirement System of Missouri and the Public Education Employee Retirement System of Missouri (PSRS and PEERS) work in partnership with the member school districts of this state to provide eligible employees and their beneficiaries with a significant source of income based on the employee's length of service and compensation in order to enhance retirement, disability and death benefits received from other sources.

GOAL

To provide retirement security to Missouri's educators and education employees after a full career of service.

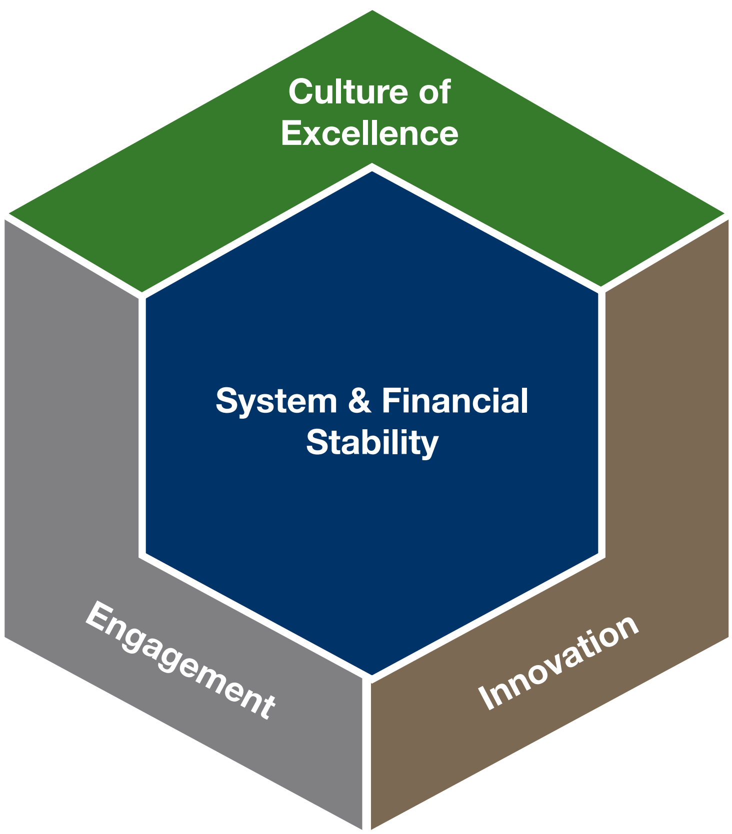
GOAL

To help school districts attract and retain the best and brightest educators and employees for Missouri's school children.

GOAL

To manage the Systems in a prudent and cost-efficient manner while continuing to provide exceptional service to our members.

FOCUS AREAS



Board of Trustees

As of June 30, 2018

The PSRS/PEERS Board of Trustees is charged by law with the administration of PSRS/PEERS. Trustees are committed to providing services to the members and beneficiaries professionally, promptly, courteously and efficiently. The Board meets regularly six times a year, with special meetings called as necessary.

It is the fiduciary responsibility of those charged with the administration of PSRS and PEERS to:

- Effectively collect contributions,
- Prudently invest the assets to obtain optimum returns,
- Equitably provide benefits,
- Impartially and in accordance with applicable law administer the benefit programs, and
- Set contribution rates that are adequate to fund promised benefits.

The seven-member Board consists of three elected PSRS members; one elected PEERS member; and three governor-appointed trustees, one of whom must be a PSRS or PEERS retiree. Trustees serve four-year terms and serve without compensation.

Dr. Aaron Zalis
Chair
Elected PSRS
Trustee

Jason Hoffman
Vice Chair
Elected PEERS
Trustee

Charles Bryant
Appointed
Trustee

Yvonne Heath
Elected PSRS
Trustee

Scott Hunt
Appointed
Trustee

Beth Knes
Appointed
Trustee

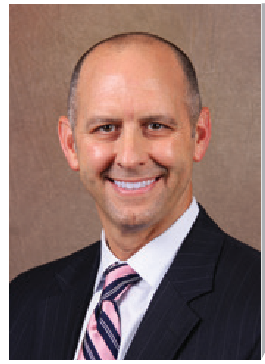
Jason Steliga
Elected PSRS
Trustee

Administrative Organization

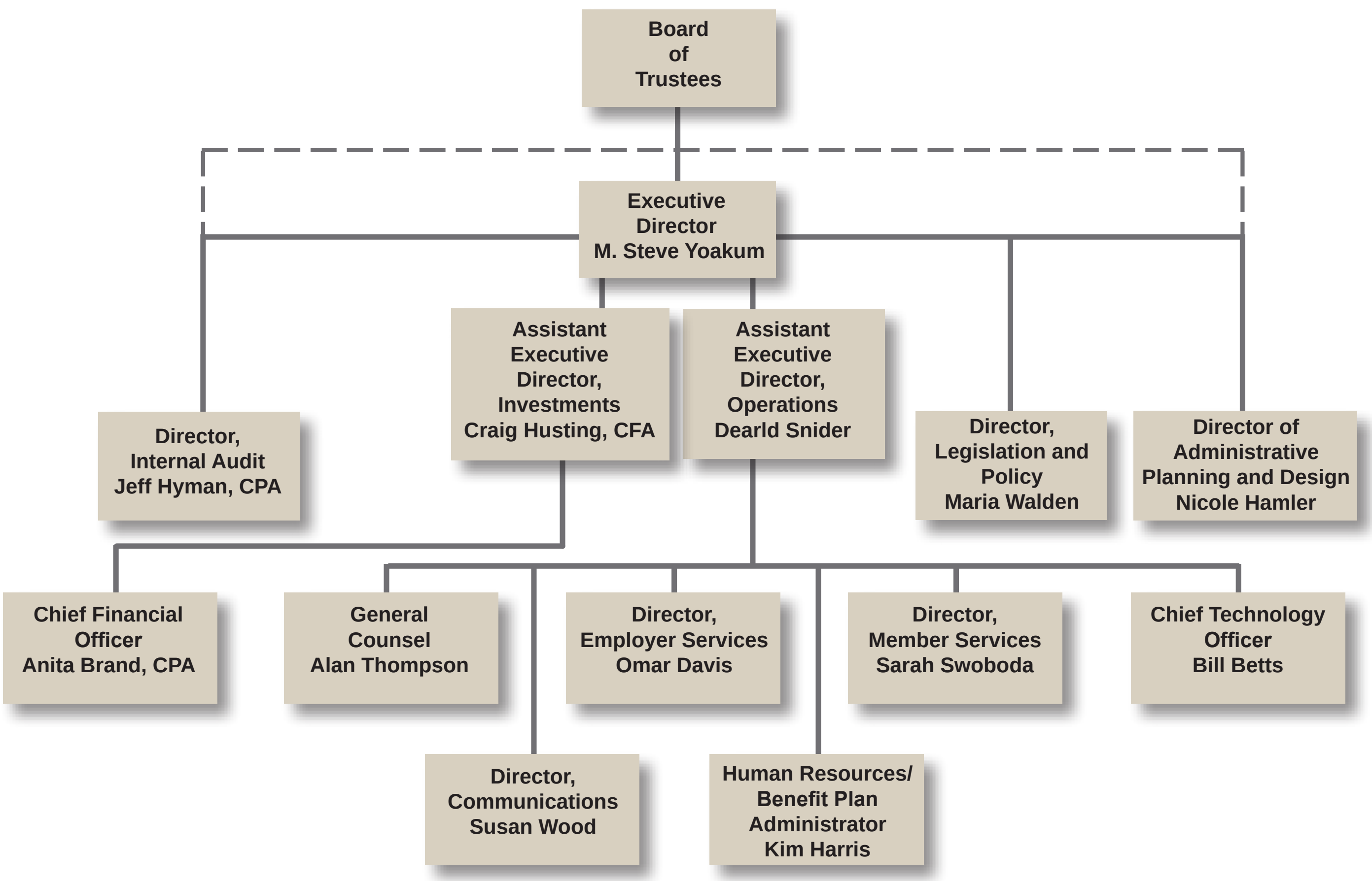
As of June 30, 2018

M. Steve Yoakum
Executive Director

Craig Husting, CFA
Assistant Executive Director, Investments



Dearld Snider
Assistant Executive Director, Operations



Professional Services

As of June 30, 2018

Actuaries

PricewaterhouseCoopers, LLP
Cindy Fraterrigo, FSA, EA, MAAA
Brandon Robertson, ASA, EA, MAAA
Chicago, Illinois
New York, NY

Auditors

Williams Keepers, LLC
Heidi A. Chick, CPA
Nick Mestres, CPA
Columbia, Missouri

Technology Consultants

Dell EMC
Travis Foxell
Round Rock, TX

Gartner Inc.
Jamie Combs
Stamford, CT

KiZAN Technologies LLC
Ken Fox
Louisville, KY

Network Technology Partners
Bill Streck
Ellisville, MO

OPTIV
Jeff Davis
Chicago, IL

Secureworks, Inc.
Bret Collard
Atlanta, GA

ShareSquared, Inc.
John Honeycutt
Montrose, CA

SHI International
Rick Wolters
Somerset, NJ

Towner Communications Systems
Steve Sisson
Jefferson City, MO

Insurance Consultants

Charlesworth & Associates
Bob Charlesworth
Overland Park, Kansas

The Insurance Group
Jason Swindle
Columbia, Missouri

Other Consultants

Cortex
Tom Iannucci
Toronto, Ontario

Legal Counsel

Groom Law Group
David Levine
Washington, D.C.

Pillsbury, Winthrop, Shaw, Pittman, LLP
Semma Arzapalo
Los Angeles, California

Thompson Coburn, LLP
Allen Allred
St. Louis, Missouri

Legislative Consultant

Statehouse Strategies, LLC
James "Jim" Moody
Jefferson City, Missouri

Medical Advisor

Andrew Matera, M.D.
Columbia, Missouri

Investment Management, Custodial and Consulting fees can be found in the Schedule of Investment Expenses on page 102. Schedules of broker commissions can be found on page 100. Additional information on Investment Managers can also be found in the Investment Section of this report.

Transmittal Letter

PSRS/PEERS

PUBLIC SCHOOL & EDUCATION EMPLOYEE
RETIREMENT SYSTEMS OF MISSOURI

November 30, 2018

To the Board of Trustees and Members of the Retirement Systems:

We are pleased to present the ***Comprehensive Annual Financial Report*** (CAFR) of the Public School Retirement System of Missouri (PSRS) and the Public Education Employee Retirement System of Missouri (PEERS) for the fiscal year ended June 30, 2018. The PSRS/PEERS' Board of Trustees and staff understand the passion our educators and schools have for providing the best for their students and families. PSRS/PEERS shares this passion when it comes to providing financial security for our members. We work to ensure all members have access to the best possible financial future by providing lifetime retirement benefits and financial security in retirement. Together, our efforts have a positive impact on many lives. ***While our members provide education for today, PSRS/PEERS provides retirement for tomorrow.*** The financial strength and stability of the Systems combined with a strong governance structure continue to provide financial security to all members.

In addition to providing information to our Board of Trustees and members concerning the financial condition of the Systems, this report also meets our reporting requirements under Sections 169.020.16 and 169.450.11 of the Revised Statues of Missouri (RSMo). Printed copies are available to the public upon request and the complete report is also posted on our website, **www.psrs-peers.org**.

This letter provides a brief overview of the contents of the CAFR. We encourage you to read the Management's Discussion and Analysis on pages 17 to 22 for a more detailed analysis of our financial position for the fiscal year.

Report Contents and Structure

Responsibility for the preparation, accuracy and completeness of this report, including all disclosures, rests with the management staff of PSRS/PEERS (the Systems). The Systems' financial statements are prepared in accordance with U.S. generally accepted accounting principles (GAAP) within the guidelines established by the Governmental Accounting Standards Board (GASB). To the best of our knowledge, the enclosed data is accurate in all material respects and fairly presents our financial position and operating results.

The management of the Systems is responsible for internal accounting controls, which are designed to provide reasonable but not absolute assurance that the financial statements are free of any material misstatements and assets are safeguarded. The cost of internal controls should not exceed the benefits to be derived. The Systems employ two internal auditors who perform operational reviews to ensure that the internal controls are functioning effectively. We believe the internal controls in place are adequate to meet the purpose for which they were intended.

Our independent external auditors, selected by the Board of Trustees, have conducted an audit of the basic financial statements in accordance with U.S. generally accepted auditing standards. This audit and the financial statements and related footnotes are presented on pages 15 to 56 of this report.

Location 3210 W. Truman Blvd. / Jefferson City, MO 65109 **Mail** P.O. Box 268 / Jefferson City, MO 65102 **Phone** (573) 634-5290
Toll Free (800) 392-6848 **Email** psrspeers@psrspeers.org **Member Services FAX** (573) 634-7934 **Employer Services FAX** (573) 634-7911

Overview of the Retirement Systems

The Public School Retirement System of Missouri (PSRS), a cost-sharing multiple employer retirement system, was established in 1946 by the Missouri legislature to provide certificated public school employees and their families with a significant and stable source of retirement income, disability and survivor benefits. The majority of PSRS members do not contribute to Social Security.

The Non-Teacher School Employee Retirement System of Missouri (NTRS), also a cost-sharing multiple employer retirement system, was established in 1965 by the Missouri legislature to build a plan similar to PSRS, but for non-certificated public school personnel. The name of the non-teacher system was changed to the Public Education Employee Retirement System of Missouri (PEERS) in August 2005 to more positively represent the members of the System. Members of PEERS contribute to Social Security.

PSRS and PEERS are governed jointly by a seven-member Board of Trustees, composed of three elected PSRS members, one elected PEERS member and three members appointed by the governor.

Unlike most public pension systems, the members of PSRS and PEERS share equally in funding the contributions to the Retirement Systems. The contribution rates in total approximate the contribution rates of similar public plans. However, this funding mechanism has kept the employer contributions lower and the employee contributions higher than many similar public plans.

The combined Systems serve approximately 272,000 total members in 534 districts and other employers. In excess of $2.8 billion is paid annually to over 91,000 service retirees and beneficiary recipients. At June 30, 2018, PSRS/PEERS had a market value of net assets of approximately $44.0 billion, making it larger than all other public retirement systems in the state of Missouri combined.

Strategic Planning - Mission, Goals and Focus Areas

During the current fiscal year, the Board of Trustees and staff prepared a three-year strategic plan. The strategic plan insures that the Board of Trustees and staff continue to proactively prepare for the future of the Systems. The process used to create the plan included a review of the Systems' current mission, goals and principles, while always being mindful of and congruent with the statutes that govern the Systems. The mission and goals of the Systems have remained the same since the creation of the Systems and therefore the mission statement and goals included on page 4 are unchanged. The Systems are financially stable and are managed based on sound governing principles. The goal of the strategic planning process was to continue to identify areas of opportunity, as well as threats, and then develop strategic objectives to address those areas while maintaining alignment with the Systems' mission and goals. The strategic plan categorizes the Systems' strategic objectives in four focus areas: 1. System and Financial Stability, 2. Culture of Excellence, 3. Engagement and 4. Innovation. Every member of the Systems' staff and Board of Trustees has an important role within each focus area. The finalized strategic plan is a detailed summation of the Systems' long-standing governance structure and philosophy.

Funding Status and Valuation Results

The Board of Trustees evaluates a large amount of information each year including, but not limited to, the annual actuarial valuations prepared by the Systems' external actuaries, PricewaterhouseCoopers, LLP. During the current year, staff and the Board of Trustees reviewed the sensitivities to changes in cost-of-living adjustment (COLA) assumptions and investment returns. The review included multiple scenarios to lower the assumed rate of return on investments. A lower assumed rate of return decreases the risk profile of the plans, which was an important consideration when determining future contribution rates and the ability to maintain a consistent COLA policy. It's important to note that decreased risk provides for greater stability of future contribution rates and COLAs.

Transmittal Letter, continued

The Board of Trustees amended the Systems' Actuarial Funding Policies at their October 29, 2018 meeting. The Actuarial Funding Policy amendments included a change to the assumed rate of return on investments. The Board of Trustees reduced the assumed rate of return from 7.6% to 7.5% effective with the June 30, 2018 actuarial valuations. All Funding Policy amendments are based on two critical elements that are at the forefront of all System decisions: the Board of Trustees' fiduciary responsibility and their funding goals.

Fiduciary responsibility includes the duties of loyalty and impartiality. The duty of loyalty requires the operation of the Systems for the exclusive benefit of the members and retirees of those Systems, and must supersede the interests of all other parties. The duty of impartiality requires that the Board not favor any one type of plan participant over another (e.g. active, inactive, retired members). The Board has a fiduciary duty to: 1. Effectively collect contributions, 2. Prudently invest the assets to obtain optimum returns, 3. Equitably provide benefits, 4. Impartially and in accordance with applicable law, administer the benefit program, and 5. Set contribution rates that are adequate to fund promised benefits.

The Board of Trustees' funding goals are: 1. Provide for the security and financial stability of the Systems, including maintaining at least an 80% pre-funded ratio, continuing to amortize the unfunded liability until PSRS/PEERS is 100% pre-funded, and allowing for a reasonable assumed rate of return given capital market estimates, 2. Maintain the contribution rates of both Systems at or below current levels, and 3. Provide a consistent COLA for PSRS/PEERS benefit recipients to maintain their purchasing power, noting COLAs should be dependable and affordable without harming the financial stability of the Systems. The Board of Trustees funding goals are in direct alignment with the Systems' mission, goals and recently adopted strategic plan.

The Systems' funding objective continues to be to achieve a funded ratio of 100% over a closed 30-year period. For this purpose, funded ratio is defined as the actuarial value of assets divided by the actuarial accrued liability determined under the entry age normal cost method and the actuarial assumptions adopted by the Board of Trustees. As of June 30, 2018, PSRS was 84.0% pre-funded, while PEERS was 86.1% pre-funded. PSRS' pre-funding remained the same as June 30, 2017 at 84.0%, while PEERS showed a slight increase in funding from the June 30, 2017 pre-funded percentage of 85.8%. The funded status of both plans remained relatively unchanged due to the investment return assumption being lowered effective June 30, 2018. The assumption change was partially offset by favorable investment experience. Additional information on actuarial assumptions and funding can be found in the actuarial section of this report. Based upon the June 30, 2018 valuations and overall financial projections, the Board of Trustees set the fiscal year 2020 contribution rates at the fiscal year 2019 level for both members and employers.

Investment Activities

The Systems continued to achieve strong absolute and relative returns in fiscal year 2018. The Systems' investment portfolio added approximately $3.6 billion in investment earnings to the growth of assets during fiscal year 2018. The Systems earned an investment return of 8.9% for fiscal year 2018 (8.7% net of all investment expenses and fees). The total plan return, net of all investment expenses and fees, exceeded both the long-term investment goal (actuarial required rate of return) of 7.6% and the total plan policy benchmark return of 7.4%. PSRS and PEERS are long-term investors with a diversified portfolio that continues to produce strong long-term returns where the annualized investment return is 8.5% (8.4% net of all investment expenses and fees) over the last 30 years.

Additional detailed information regarding the Systems' investments, including policies and strategies, can be found in the Investment Section of this report beginning on page 57.

Legislative Changes During Fiscal Year 2017

Governor Michael L. Parson signed legislation (CCS SCS SB Senate Bill 892) impacting the Systems that became effective August 28, 2018. This bill modified the statutory provision regarding working after retirement for individuals who work at a PSRS-covered employer in a non-certificated position. Additional information on this legislation and working after retirement provisions is available on our website, **www.psrs-peers.org**.

Awards

Public Pension Coordinating Council (PPCC), Public Pension Standards Award

PSRS and PEERS each received the Public Pension Standards Awards in 2018 in recognition of meeting professional standards for plan administration and plan funding as set forth in the Public Pension Standards of the PPCC. These awards are presented by the PPCC, a confederation of the National Association of State Retirement Administrators (NASRA), the National Conference on Public Employee Retirement Systems (NCPERS), and the National Council on Teacher Retirement (NCTR).

Certificate of Achievement for Excellence in Financial Reporting

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to PSRS and PEERS for the *Comprehensive Annual Financial Report* for the fiscal year ended June 30, 2017. The Certificate of Achievement is a prestigious national award recognizing excellence in the preparation of state and local government financial reports. To be awarded the Certificate of Achievement, a government unit must publish an easily readable and efficiently organized CAFR whose contents meet or exceed program standards. This report must satisfy both U.S. generally accepted accounting principles, applicable legal requirements and GFOA standards. A Certificate of Achievement is valid for only one year. We believe our current report continues to meet the Certificate of Achievement program requirements and are submitting it to GFOA for consideration again this year.

Professional Services

Certain professional services are provided to the Systems by retained consultants. The required opinion letters from two of those consultants, PricewaterhouseCoopers, LLP, actuaries, and Williams Keepers LLC, independent certified public accountants, are contained elsewhere in this report.

The Systems conducted a general consultant search during the current year resulting in the selection of Verus Advisory, Inc. Willis Towers Watson was the previous general consultant from 2011 to December 2017.

Acknowledgements

We would like to express our thanks and gratitude to the Board of Trustees, staff, and consultants who have worked diligently to produce this report and to ensure the successful operation of the Systems.

Respectfully submitted,

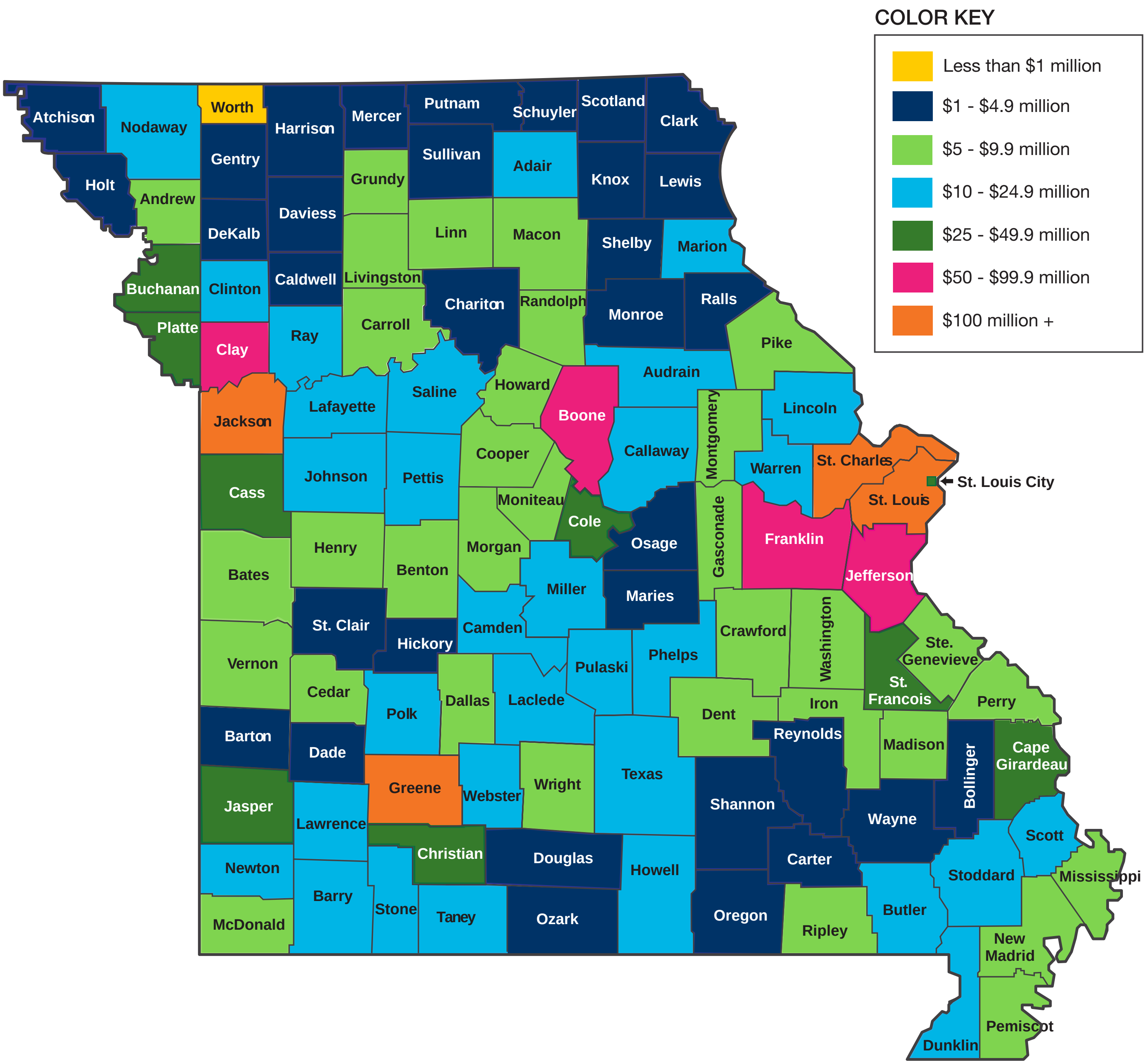
M. Steve Yoakum
Executive Director

Anita Brand, CPA
Chief Financial Officer

Economic Impact

The benefits distributed by PSRS/PEERS make a sizable contribution to Missouri's economy and help Missouri public schools attract and retain quality teachers and education employees.

As of June 30, 2018, of the over 91,000 individuals receiving benefits from PSRS/PEERS, approximately 89% of them live in Missouri. Total benefits paid for the one-year period ending June 30, 2018 were over $2.8 billion. Of this amount, more than $2.5 billion was distributed among Missouri's 114 counties, positively impacting the state's economy.



Certificate of Achievement for Excellence in Financial Reporting

GFOA

Government Finance Officers Association

Certificate of Achievement for Excellence in Financial Reporting

Presented to

The Public School and Education Employee Retirement Systems of Missouri

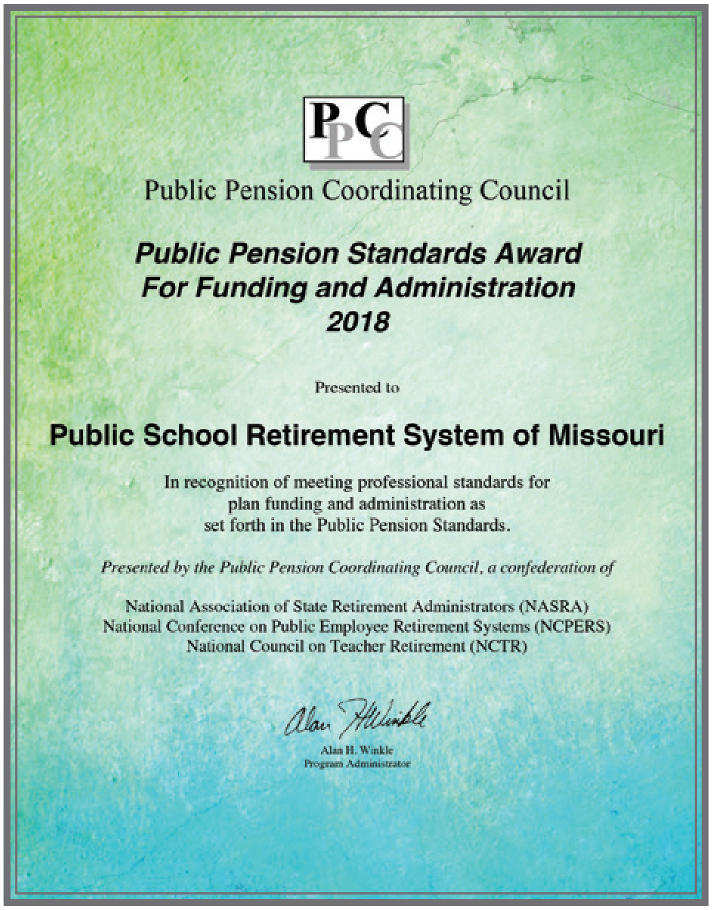
For its Comprehensive Annual Financial Report for the Fiscal Year Ended

June 30, 2017

Christopher P. Morrill

Executive Director/CEO

Public Pension Coordinating Council Public Pension Standards Awards



PPC

Public Pension Coordinating Council

Public Pension Standards Award
For Funding and Administration
2018

Presented to

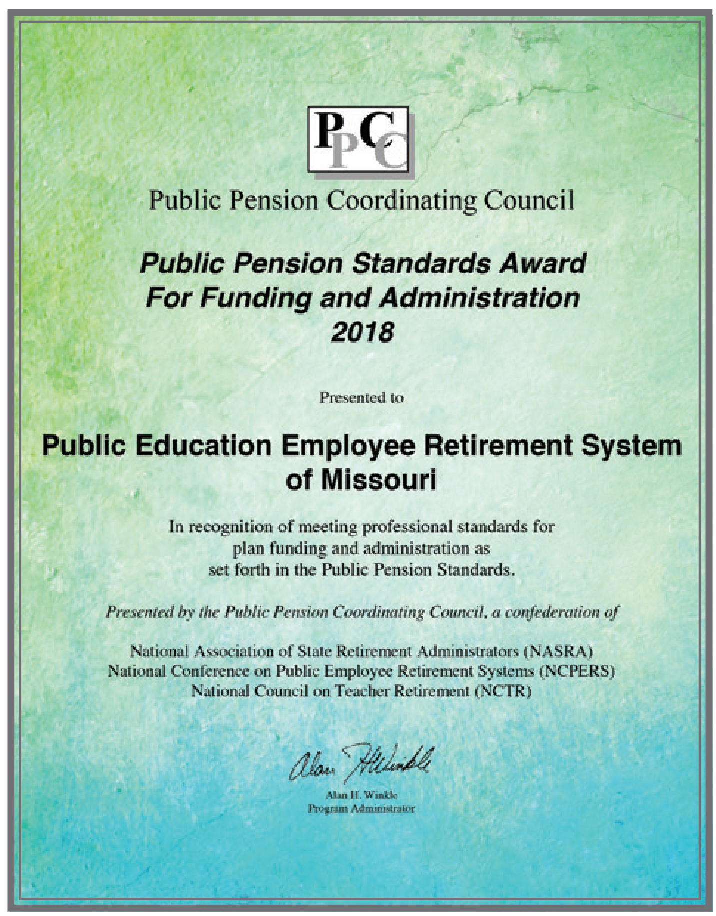
Public School Retirement System of Missouri

In recognition of meeting professional standards for
plan funding and administration as
set forth in the Public Pension Standards.

Presented by the Public Pension Coordinating Council, a confederation of

National Association of State Retirement Administrators (NASRA)
National Conference on Public Employee Retirement Systems (NCPERS)
National Council on Teacher Retirement (NCTR)

Alan H. Winkle
Program Administrator



PPC

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National Association of State Retirement Administrators (NASRA)
National Conference on Public Employee Retirement Systems (NCPERS)
National Council on Teacher Retirement (NCTR)

Alan H. Winkle
Program Administrator

Education is the Foundation for Future Progress.

Daily, our public school administrators and educators must battle budget woes, building and maintenance challenges, social fads, community issues and even familial problems as they work to provide their students with a solid educational foundation for the future.

But even facing this hefty set of challenges, Missouri public schools demonstrate the enormous positive impact they can have on students, families and communities, and they do so without much fanfare.

Financial Section

Independent Auditors' Report

WILLIAMS KEEPERS LLC
CERTIFIED PUBLIC ACCOUNTANTS & CONSULTANTS

2005 West Broadway, Suite 100, Columbia, MO 65203
OFFICE (573) 442-6171 FAX (573) 777-7800
3220 West Edgewood, Suite E, Jefferson City, MO 65109
OFFICE (573) 635-6196 FAX (573) 644-7240
www.williamskeepers.com

The Board of Trustees of the
Public School and Public Education Employee
Retirement Systems of Missouri

We have audited the accompanying financial statements of the Public School and Public Education Employee Retirement Systems of Missouri (the Systems), which comprise the statements of fiduciary net position as of June 30, 2018, the related statements of changes in fiduciary net position for the year then ended, and the related notes to the financial statements.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with U.S. generally accepted accounting principles; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with U.S. generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the fiduciary net position of the Public School and Public Education Employee Retirement Systems of Missouri as of June 30, 2018, and the respective changes in fiduciary net position for the year then ended, in conformity with U.S. generally accepted accounting principles.

Independent Auditors' Report, continued

Other Matters

Prior Year Information

The prior year combined total information has been derived from the Systems' 2017 financial statements and, in our report dated November 29, 2017, we expressed unmodified opinions on the respective financial statements of the Systems' fiduciary net position.

Required Supplementary Information

U.S. generally accepted accounting principles require that the management's discussion and analysis on pages 17-22, schedules related to the defined benefit plans (schedules of changes in the employers' net pension liability, employers' net pension liability, employer contributions, investment returns, and notes to schedules) on pages 48-52, and schedules related to the defined benefit OPEB plan (schedule of changes in the net OPEB liability and related ratios) on page 53 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context.

We have applied certain limited procedures to the required supplementary information in accordance with U.S. generally accepted auditing standards, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audits of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the Public School and Public Education Employee Retirement Systems of Missouri basic financial statements. The introductory, investment, actuarial and statistical sections and the additional information presented on pages 54 through 56 are presented for purposes of additional analysis and are not a required part of the financial statements.

The additional information presented on pages 54 through 56 is the responsibility of management and was derived from and relate directly to the underlying accounting and other records used to prepare the financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with U.S. generally accepted auditing standards. In our opinion, the additional information presented on pages 54 through 56 is fairly stated in all material respects in relation to the basic financial statements as a whole.

The introductory, investment, actuarial and statistical sections have not been subjected to the auditing procedures applied in the audit of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on them.

Williams Keepers LLC

November 30, 2018

Management's Discussion and Analysis

Introduction

This discussion and analysis of the financial position of the Public School Retirement System of Missouri (PSRS) and the Public Education Employee Retirement System of Missouri (PEERS), collectively referred to as the Systems, provides an overview of the Systems' financial activities for the fiscal year ended June 30, 2018. We encourage you to consider the information presented here in conjunction with the *Transmittal Letter* included in the *Introductory Section* and the financial statements and other information presented in the *Financial Section* of this *Comprehensive Annual Financial Report* (CAFR).

Financial Highlights

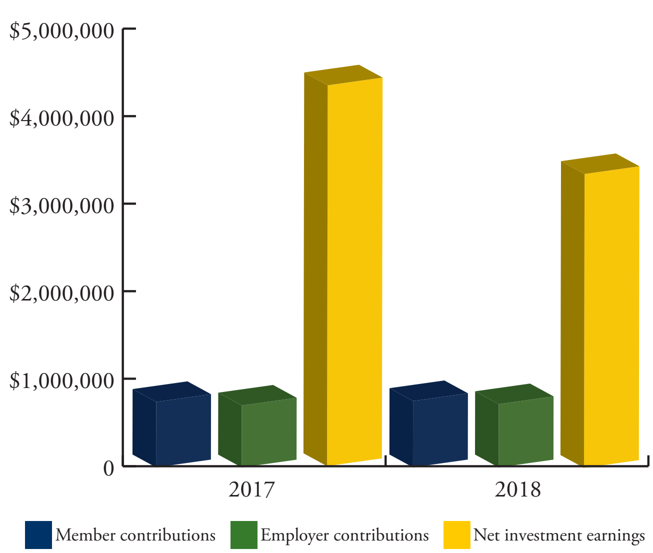
The following highlights are explained in more detail for each System later in this discussion.

- The Board of Trustees adopts actuarial assumptions, each of which individually represents a reasonable long-term estimate of anticipated experience for the Systems, derived from experience studies conducted every fifth year. The most recent comprehensive experience study was completed in June 2016. All economic and demographic assumptions were reviewed and updated, where appropriate, based on the results of the study and effective with the June 30, 2016 valuations. For the June 30, 2017 valuations, the investment rate of return was reduced from 7.75% to 7.6% and the assumption for annual cost-of-living adjustments was updated in accordance with the funding policies amended by the Board of Trustees at their November 3, 2017 meeting. The Board of Trustees further reduced the investment rate of return to 7.5% at their October 29, 2018 meeting. The actuarial assumed rate of return of 7.5% is effective with the June 30, 2018 valuations and fiscal year 2019 investment performance. All other assumptions remained consistent with the prior year. The significant actuarial assumptions are detailed in the notes to the financial statements and the notes to the schedules of required supplementary information.
- As of June 30, 2018, PSRS' fiduciary net position as a percentage of the total pension liability increased to 84.1% from 83.8% for the prior year. PSRS' net pension liability approximated $7.4 billion as of June 30, 2018. As of June 30, 2018, PEERS' fiduciary net position as a percentage of the total pension liability increased to 86.1% from 85.4% for the prior year. PEERS' net pension liability approximated $772.7 million as of June 30, 2018. The net pension liability is calculated utilizing the market value of assets in accordance with Governmental Accounting Standards Board (GASB) Statement No. 67, *Financial Reporting for Pension Plans*, for accounting presentation purposes.
- The pre-funded status of the Systems is measured as the ratio of assets available for benefits to a benefit liability measure for the Systems. While there are several such measures that could be appropriately used, the benefit liability measure that ties most closely to the Systems' funding policies is the actuarial accrued liability (AAL) computed in accordance with assumptions and methods approved by the Board of Trustees. Using the actuarial value of assets (AVA), a smoothed asset value that recognizes 20% of the total investment gain or loss on the AVA for each of the preceding five years. This is the significant difference between accounting measurements in accordance with GASB Statement No. 67 and funding calculations. As of June 30, 2018, the pre-funded ratios for funding purposes were 84.0% for PSRS and 86.1% for PEERS.
- The Systems implemented Government Accounting Standards Board (GASB) Statement No. 75, *Financial Reporting for Post-Employment Benefit Plans Other Pension Plans*, during fiscal year 2018. GASB Statement No. 75 required changes in the presentation of the financial statements, notes to the financial statements and required supplementary information. The implementation of GASB Statement No. 75 was immaterial to the Systems in total.
- The Systems' assets increased through investment earnings by $3.6 billion from the previous year with a total fund performance of 8.9% (8.7% net of all investment expenses and fees). The total plan return, net of all investment expenses and fees, exceeded both the policy benchmark return of 7.4% and the long-term investment goal (actuarially assumed return) of 7.6%. Over long periods of time, the Systems continue to produce investment returns that meet or exceed the Systems' objective. The annualized investment return for PSRS and PEERS is 8.5% (8.4% net of all investment expenses and fees) over the last 30 years.
- The Systems' investment returns for the last five years have exceeded 65% of the peer group as defined by the Wilshire TUCS universe of public pension plans with assets in excess of $1 billion. Additionally, the Systems generated the returns (and

longer-term investment returns) while taking less risk than approximately two-thirds of comparable public funds in the United States.

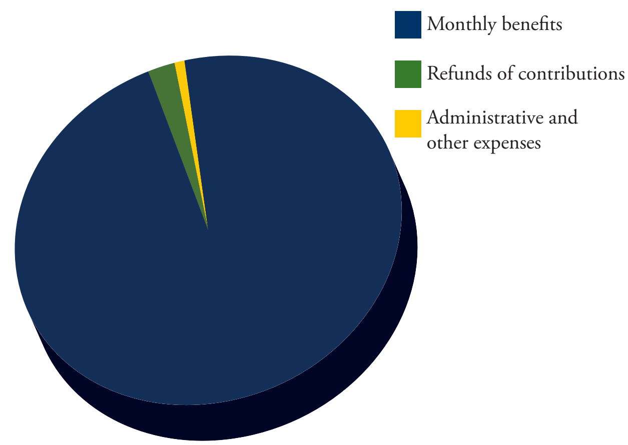
- Cost-sharing, defined-benefit, retirement systems, such as the Systems, have a long-term perspective on financial activities. The Systems' primary responsibility is to assure that sufficient funds will be available to provide retirement, disability and survivor benefits to current and future members. Condensed Statements of Fiduciary Net Position and Statements of Changes in Fiduciary Net Position are provided for each System on the following pages.
- Pension benefits are funded through a combination of member and employer contributions and investment income. The following chart depicts the combined amount of funding received by the Systems from each source for the years ended June 30, 2018 and 2017.

Additions by Funding Source (000's)



- Expenses are incurred for the sole purpose for which the Systems were created: the payment of benefits to the Systems' membership and their beneficiaries. Included in the deductions from fiduciary net position were monthly benefit payments, refunds of contributions due to member terminations or deaths and administrative and other expenses. The following pie chart depicts the combined Systems deductions from Plan Fiduciary Net Position for the year ended June 30, 2018.

Deductions from Plan Fiduciary Net Position Fiscal Year 2018



- The net position of the combined Systems increased by $2.3 billion. The net position of PSRS increased by $2.0 billion while the net position of PEERS increased by $323.3 million.
- Total revenues for fiscal year 2018 were comprised of contribution revenue of $1.7 billion and investment gains of $3.6 billion, compared to contribution revenue of $1.6 billion and investment gains of $4.6 billion for fiscal year 2017.
- Expenses increased 3.7% over the prior year from $2.8 billion to $2.9 billion. Retirement benefits and member refunds increased by $103.5 million from the prior year, while administrative expenses increased by $1.7 million during the same time period. The increase in administrative expenditures is directly related to the implementation of GASB Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other than Pensions*. The implementation of GASB Statement No. 75 resulted in a one-time non-cash expense of $1.7 million in the current year. Additional information on GASB Statement No. 75 is included in Note 7 to the financial statements.

Overview of the Financial Statements

The CAFR reflects the activities of the Systems as reported in Statements of Fiduciary Net Position and the Statements of Changes in Fiduciary Net Position (the Systems' financial statements). The Systems' financial statements, notes to the financial statements, and required supplementary information were prepared in conformity with GASB Statement No. 67, *Financial Reporting for Pension Plans*, as amended. This discussion and analysis is intended to serve as an introduction to the financial section of the CAFR. The financial section of the CAFR consists of: the basic financial statements comprised of the

Statements of Fiduciary Net Position and the Statements of Changes in Fiduciary Net Position, the notes to the basic financial statements, required supplementary information and other supplementary information.

The Statements of Fiduciary Net Position present information on the assets and liabilities of the Systems, with the difference between the two reported as net position. The net position of the Systems reflects the resources available to pay benefits to members when due. Over time, increases and decreases in net position measure whether the Systems' financial position is improving or deteriorating.

The Statements of Changes in Fiduciary Net Position present information detailing the changes in net position that occurred during the current fiscal year. All changes in net position are reported on an accrual basis. This means that the revenue or expense is recognized as soon as the underlying event giving rise to the change occurs, regardless of when the actual cash is received or paid. Thus, revenues and expenses are reported in this statement for some items that will not result in cash flows until future fiscal periods. For example, contributions due from an employer, even though not yet paid by year end, will be reflected as revenue. Earned vacation accruals will be reflected as an expense, even though they have not been paid to employees.

The notes to the financial statements provide additional information that is essential to a full understanding of the data provided in the financial statements. The notes can be found on pages 26 through 47.

The report also contains required supplementary information in addition to the basic financial statements themselves. The required supplementary information consists of the following schedules and related notes:

- The Schedules of Changes in the Employers' Net Pension Liability include historical trend information about the annual changes of the net pension liability, including assumption changes and variances of assumed experience.
- The Schedules of Employers' Net Pension Liability include historical trend information about whether each System's net position is increasing or decreasing over time relative to the total pension liability. The schedules provide a long-term, ongoing perspective of the accumulation of assets to pay benefits when due.
- The Schedules of Employer Contributions present historical trend information about the actuarially determined contributions of employers and the actual contributions made by employers.
- The Schedules of Investment Returns present historical annual money-weighted rate of returns.
- The of Schedules of Changes in the Net OPEB Liability and Related Ratios include historical trend information about the defined benefit other post-employment benefit (OPEB) plan from a long-term, ongoing perspective.
- The Notes to the Schedules of Required Supplementary Information provide additional information that is essential to a full understanding of the data provided in the schedules.

Other supplementary schedules are also included. The Schedules of Administrative Expenses present the overall cost of administering the Systems. The Schedules of Professional Services further detail this category of administrative expense. The Schedules of Investment Expenses show the costs associated with investing the assets of the Systems. These expenses are shown as a reduction of revenue on the Statements of Changes in Fiduciary Net Position.

Financial Analysis of the Public School Retirement System of Missouri (PSRS)

PSRS is a mandatory cost-sharing multiple employer retirement system for full-time certificated employees and certain part-time employees of participating employers. PSRS members were required to contribute 14.5% of their annual covered salary during fiscal year 2018. The employer was required to match that amount. Most PSRS members do not contribute to Social Security, except for employees hired after 1986 who contribute to Medicare only. In some instances, positions may be determined not to be exempt from Social Security contributions. PSRS members required to contribute to Social Security are required to contribute two-thirds of the approved PSRS contribution rate and their employer is required to match the contribution. The members' benefits are further calculated at two-thirds the normal benefit amount.

Public School Retirement System of Missouri
Fiduciary Net Position (000's)

	2018	2017	Change
Cash & investments	$ 39,880,821	$ 37,858,027	$ 2,022,794
Receivables	2,343,682	1,937,380	406,302
Other	23,175	24,115	(940)
Total assets	42,247,678	39,819,522	2,428,156
Deferred outflows of resources	67	-	67
Total liabilities	2,988,142	2,539,276	448,866
Deferred inflows of resources	58	-	58
Fiduciary net position	$ 39,259,545	$ 37,280,246	$ 1,979,299

Assets

Total assets of PSRS as of June 30, 2018 were $42.2 billion and were mostly comprised of cash, investments, investment sales receivables and contributions due from employers. Total assets increased by $2.4 billion or 6.1% from the prior year due to investment earnings.

Liabilities

Total liabilities as of June 30, 2018, were $3.0 billion and were mostly comprised of payables from the purchase of investments and obligations under security lending arrangements. Total liabilities increased by $448.9 million from the prior year. This was due to an increase in investment purchase liabilities, accounts payable and obligations under security lending arrangements.

Net Position

PSRS assets exceeded liabilities at June 30, 2018, by $39.3 billion. This was an increase of $2.0 billion from the 2017 net position. This increase was a result of investment earnings that totaled $3.2 billion for the year offset by benefit payments and other expenses which exceeded contribution revenue by $1.2 billion.

Deferred inflows and outflows are presented in accordance with GASB Statement No.75.

Public School Retirement System of Missouri
Changes in Fiduciary Net Position (000's)

	2018	2017	Change
Additions			
Member contributions	$ 726,996	$ 719,625	$ 7,371
Employer contributions	696,970	684,858	12,112
Investment income	3,173,732	4,104,110	(930,378)
Other	4	13	(9)
Total additions	4,597,702	5,508,606	(910,904)
Deductions			
Monthly benefits	2,555,656	2,471,215	84,441
Refunds of contributions	51,329	50,618	711
Administrative expenses	11,019	10,496	523
Other	399	1	398
Total deductions	2,618,403	2,532,330	86,073
Change in fiduciary net position	$1,979,299	$2,976,276	$ (996,977)

Revenues – Additions to Fiduciary Net Position

The reserves needed to finance retirement benefits are accumulated through the collection of employer and employee contributions and through investment earnings. Total contribution revenue for the year increased by $19.5 million to $1.42 billion. This was a 1.4% increase over the prior year. Retirement contributions were calculated at 14.5% of retirement salary for each member during fiscal year 2018. The employer matched this amount. Contribution rates were unchanged from the prior year. In addition to contributions on salary, members may also pay contributions to reinstate previously refunded service or to purchase various types of elective service. Such contributions were approximately $6.4 million less than with the prior year. An increased retirement salary base and the addition of new members resulted in the overall increase in contributions.

The net investment gain was $3.2 billion as compared to a net investment gain of $4.1 billion in 2017. The current year gains are reflective of an 8.7% net return on the Systems' diversified investment portfolio, compared to 12.3% in the prior year. All investment related expenses, such as fees paid to investment managers, are reflected as a reduction in revenue and are accounted for in this net figure. The *Investment Section* of this report contains additional information regarding investments and securities lending activity.

Expenses – Deductions from Fiduciary Net Position

The primary expenses of PSRS include the payment of pension benefits to members and beneficiaries, refunds of contributions to former members, and the cost of administering the System. Total expenses for fiscal year 2018 were $2.6 billion, an increase of 3.4% over fiscal year 2017.

Benefit expenses increased by $84.4 million to $2.56 billion. This was a result of an overall increase of 1,523 monthly benefit recipients from the prior year end. There were no changes to the benefit formula during 2018. Refunds of contributions increased by $0.7 million during the current year to a total of $51.3 million.

Administrative expenses increased by $0.5 million to $11.0 million. As previously discussed, the increase in administrative expenditures is directly related to the implementation of GASB Statement No. 75. The implementation of GASB No. 75 resulted in a one-time non-cash expense. The cost of administrative items was charged 62% to PSRS and 38% to PEERS, unless the expense was determined to be of direct benefit to only one System. In such instance, the allocation of expense was 100% to the benefited System. As always, we will continue to look for ways to streamline costs when prudent.

Financial Analysis of the Public Education Employee Retirement System of Missouri (PEERS)

PEERS is a mandatory cost-sharing multiple employer retirement system for non-certificated employees and certain part-time certificated employees of participating employers. PEERS members were required to contribute 6.86% of their annual covered salary during 2018. The employer was required to match that amount. PEERS members also contribute to Social Security.

Public Education Employee Retirement System of Missouri
Fiduciary Net Position (000's)

	2018	2017	Change
Cash & investments	$ 4,848,898	$ 4,519,700	$ 329,198
Receivables	285,811	231,308	54,503
Total assets	5,134,709	4,751,008	383,701
Deferred outflows of resources	32	-	32
Total liabilities	364,939	304,590	60,349
Deferred inflows of resources	36	-	36
Fiduciary net position	$ 4,769,766	$ 4,446,418	$ 323,348

Assets

Total assets of PEERS as of June 30, 2018 were $5.1 billion and were mostly comprised of cash, investments, investment sales receivables and contributions due from employers. Total assets increased by $383.7 million or 8.1% from the prior year due to investment earnings during the year.

Liabilities

Total liabilities as of June 30, 2018 were $364.9 million and were mostly comprised of payables from the purchase of investments and obligations under security lending arrangements. Total liabilities increased by $60.3 million. This was due to an increase in investment purchase liabilities, accounts payable and obligations under security lending arrangements.

Net Position

PEERS assets exceeded liabilities at June 30, 2018 by $4.8 billion. This was up from the 2017 net position of $4.4 billion by $323.3 million. This increase was a result of investment earnings that totaled $381.5 million for the year offset by benefit payments and other expenses which exceeded contribution revenue by $58.2 million.

Deferred inflows and outflows are presented in accordance with GASB Statement No. 75.

Public Education Employee Retirement System of Missouri
Changes in Fiduciary Net Position (000's)

	2018	2017	Change
Additions			
Member contributions	$ 121,468	$ 118,447	$ 3,021
Employer contributions	115,103	111,240	3,863
Investment income	381,524	485,047	(103,523)
Total additions	618,095	714,734	(96,639)
Deductions			
Monthly benefits	269,364	251,078	18,286
Refunds of contributions	18,270	18,191	79
Administrative expenses	7,106	6,364	742
Other	7	13	(6)
Total deductions	294,747	275,646	19,101
Change in fiduciary net position	$ 323,348	$ 439,088	$ (115,740)

Revenues – Additions to Fiduciary Net Position

The reserves needed to finance retirement benefits are accumulated through the collection of employer and employee contributions and through investment earnings. Total contribution revenue for the year increased by $6.9 million to $236.6 million. Retirement contributions were calculated at 6.86% of retirement salary for each member during fiscal year 2018. The employer matched this amount. Contribution rates were unchanged from the prior year. Overall contribution revenue increased by 3.0%. In addition to contributions on salary, members may also pay contributions to reinstate previously refunded service or to purchase various types of elective service. Such contributions were $0.6 million less than the prior year. The increase in total contributions is attributable to a higher retirement salary base and the addition of new members.

The net investment gain was $381.5 million as compared to a net investment gain of $485.0 million in 2017. The current year gains are reflective of a 8.7% net return on the Systems' diversified investment portfolio, as compared to 12.3% in the prior year. All investment related expenses, such as fees paid to investment managers, are reflected as a reduction in revenue and are accounted for in this net figure. The *Investment Section* of this report contains additional information regarding investments and securities lending activity.

Expenses – Deductions from Fiduciary Net Position

The primary expenses of PEERS include the payment of pension benefits to members and beneficiaries, refunds of contributions to former members, and the cost of administering the System. Total expenses for fiscal year

2018 were $294.7 million, an increase of 6.9% over fiscal year 2017.

Benefit expenses increased by $18.3 million to $269.4 million. This was a result of an overall increase of 1,358 monthly benefit recipients from the prior year end. There were no changes to the benefit formula during 2018. Refunds of contributions remained consistent with the prior year.

Administrative expenses increased by $0.7 million As previously discussed, the increase in administrative expenditures is directly related to the implementation of GASB Statement No. 75. The implementation of GASB No. 75 resulted in a one-time non-cash expense. The cost of administrative items was charged 62% to PSRS and 38% to PEERS, unless the expense was determined to be of direct benefit to only one System. In such instance, the allocation of expense was 100% to the benefited System. As always, we will continue to look for ways to streamline costs when prudent.

Summary

The total net returns of 8.7% for PSRS and PEERS exceeded both the long-term investment goal of earning 7.6% and the total plan policy benchmark return of 7.4%. Due to the long-term nature of defined benefit pension plans, it is important to look at the financial performance of the Systems over a period of years and not just at this single point in time. Over long periods of time, the Systems continue to produce investment returns that meet or exceed the Systems' objectives. The annualized investment return for the Systems over the last 30 years is 8.4%, net of all fees and expenses.

The actuarial assumed rate of return was 8.0% from 1980 through fiscal year 2016. The Board of Trustees set the actuarial assumed rate of return at 7.75%, effective with the June 30, 2016 actuarial valuations and fiscal year 2017 investment performance measurement. The Board of Trustees considered the current funded status of the Systems, expectations of capital markets and other factors during fiscal year 2017 and 2018. Based on these considerations the Board of Trustees approved reducing the risk profile of the plans by approving a further reduction of the actuarial assumed rate of return to 7.6% as of June 30, 2017 and 7.5% as of June 30, 2018. The actuarial assumed rate of return of 7.5% is effective with the June 30, 2018 valuations and fiscal year 2019 investment performance. Detailed information regarding the Systems' investment portfolio is included in the *Investment Section* of this report.

The Systems' funding objective is to achieve a funded ratio of 100% over a closed 30-year period. For this purpose, funded ratio is defined as the actuarial value of assets divided by the actuarial accrued liability determined under the entry age normal cost method and the actuarial assumptions adopted by the Board. Detailed information regarding the Systems' actuarial assumptions is included in the *Actuarial Section* of this report.

The economic factor that is of primary significance to the Systems is the investment rate of return earned in global capital markets. Legislative, demographic, and actuarial assumption changes can also have a significant impact on the funded status of the Systems. All of these factors are incorporated into the annual actuarial valuations, which determine the contribution rates at which participating employers must contribute in order to appropriately fund benefits.

The fiscal year 2020 contribution rates remain unchanged from the fiscal year 2019 rates. The fiscal year 2020 contribution rate for PSRS remains 29.0%. The fiscal year 2020 contribution rate for PEERS remains 13.72%. The fiscal year 2020 contribution rates are in compliance with the PSRS/PEERS Board of Trustees' Funding Policy and represent the continued stability of contribution rates for employers and members.

The Board of Trustees, management and staff continually strive to improve the financial position of the Systems through a prudent investment program and long-term strategic planning.

Requests for Information

This financial report is designed to provide the Board of Trustees, our members, and other users of our financial report with a general overview of the Systems' finances and to demonstrate the Systems' accountability for the money it receives. If you have any questions about this report or need additional financial information, contact the Public School and Education Employee Retirement Systems of Missouri (PSRS/PEERS), P.O. Box 268, Jefferson City, MO 65102.

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Public School Retirement System of Missouri
Public Education Employee Retirement System of Missouri
Statements of Fiduciary Net Position

as of June 30, 2018
with comparative totals for June 30, 2017

			Combined Totals	
	PSRS	**PEERS**	**June 30, 2018**	**June 30, 2017**
ASSETS				
Cash	$ 551,373,788	$ 70,537,724	$ 621,911,512	$ 139,136,493
Receivables				
Contributions	186,831,294	23,899,130	210,730,424	217,053,033
Accrued interest and dividends	77,022,290	9,354,526	86,376,816	83,223,859
Investment sales	2,079,449,696	252,557,497	2,332,007,193	1,867,718,251
Receivable from PEERS for allocated expenses	346,094	-	346,094	669,925
Other	32,498	-	32,498	22,672
Total receivables	2,343,681,872	285,811,153	2,629,493,025	2,168,687,740
Investments, at fair value				
U.S. Treasuries and TIPS	6,697,373,362	813,422,825	7,510,796,187	7,005,104,466
U.S. public equities	11,894,830,441	1,444,674,809	13,339,505,250	12,782,756,946
Non-U.S. public equities	6,023,148,738	731,535,542	6,754,684,280	7,008,600,083
Short term investments	738,806,114	91,577,656	830,383,770	664,250,864
Public debt	2,055,992,809	249,574,894	2,305,567,703	2,810,908,890
Private equity	3,772,083,364	458,134,636	4,230,218,000	3,489,556,443
Private credit	324,624,653	39,426,965	364,051,618	279,906,568
Private real estate	2,920,263,157	354,677,659	3,274,940,816	3,157,690,297
Hedged assets	4,568,016,938	554,731,578	5,122,748,516	4,758,787,820
Total investments	38,995,139,576	4,737,756,564	43,732,896,140	41,957,562,377
Invested securities lending collateral	334,307,687	40,603,008	374,910,695	281,029,026
Prepaid expenses	43,982	168	44,150	110,800
Capital assets, net of accumulated depreciation	23,131,284	-	23,131,284	24,004,180
Total assets	42,247,678,189	5,134,708,617	47,382,386,806	44,570,530,616
DEFERRED OUTFLOW OF RESOURCES				
Outflows related to other post employment benefit obligations	67,183	31,615	98,798	-
LIABILITIES				
Accounts payable	20,078,355	2,263,302	22,341,657	15,767,551
Interest payable	1,060,518	128,804	1,189,322	570,135
Securities lending collateral	334,293,835	40,601,326	374,895,161	281,009,269
Investment purchases	2,628,749,004	319,272,098	2,948,021,102	2,541,434,371
Payable to PSRS for allocated expenses	-	346,094	346,094	669,925
Accrued medical claims	49,600	30,400	80,000	80,000
Net other post employment benefit obligation	2,349,095	1,439,768	3,788,863	2,050,100
Compensated absences	1,561,531	857,584	2,419,115	2,285,194
Total liabilities	2,988,141,938	364,939,376	3,353,081,314	2,843,866,545
DEFERRED INFLOW OF RESOURCES				
Inflows related to other post employment benefit obligations	58,026	35,564	93,590	-
NET POSITION - RESTRICTED FOR PENSIONS	$ 39,259,545,408	$ 4,769,765,292	$ 44,029,310,700	$ 41,726,664,071

See accompanying Notes to the Financial Statements.

Public School Retirement System of Missouri
Public Education Employee Retirement System of Missouri
Statements of Changes in Fiduciary Net Position

for the year ended June 30, 2018
with comparative totals for the year ended June 30, 2017

			Combined Totals Year Ended	
	PSRS	**PEERS**	**June 30, 2018**	**June 30, 2017**
ADDITIONS				
Contributions				
Employer	$ 696,970,398	$ 115,103,143	$ 812,073,541	$ 796,097,303
Member	726,996,161	121,467,850	848,464,011	838,072,163
Total contributions	1,423,966,559	236,570,993	1,660,537,552	1,634,169,466
Investment income				
From investing activities:				
Net appreciation in fair value of investments	3,208,445,166	381,454,359	3,589,899,525	4,646,918,237
Interest from investments	205,612,120	24,751,592	230,363,712	203,957,656
Interest from bank deposits	223,345	27,726	251,071	102,945
Dividends	213,546,895	25,721,214	239,268,109	220,717,264
Total investment income	3,627,827,526	431,954,891	4,059,782,417	5,071,696,102
Less investment expenses	456,932,588	50,772,656	507,705,244	488,020,784
Net income from investing activities	3,170,894,938	381,182,235	3,552,077,173	4,583,675,318
From security lending activities:				
Security lending gross income	4,809,465	560,854	5,370,319	3,998,495
Net (depreciation) appreciation in fair value of security lending collateral	(3,787)	(436)	(4,223)	20,726
Less security lending activity expenses:				
Agent fees	630,007	70,001	700,008	1,155,313
Broker rebates (received)	1,339,107	148,790	1,487,897	(2,617,366)
Total security lending expenses	1,969,114	218,791	2,187,905	(1,462,053)
Net income from security lending activities	2,836,564	341,627	3,178,191	5,481,274
Total net investment income	3,173,731,502	381,523,862	3,555,255,364	4,589,156,592
Other income				
Miscellaneous income	4,416	103	4,519	13,526
Total other income	4,416	103	4,519	13,526
Total additions	4,597,702,477	618,094,958	5,215,797,435	6,223,339,584
DEDUCTIONS				
Monthly benefits	2,555,655,919	269,363,965	2,825,019,884	2,722,291,994
Refunds of contributions	51,329,094	18,270,143	69,599,237	68,808,506
Administrative expenses	11,019,274	7,106,135	18,125,409	16,861,562
Other expenses	398,845	7,431	406,276	13,958
Total deductions	2,618,403,132	294,747,674	2,913,150,806	2,807,976,020
Net increase in net position	1,979,299,345	323,347,284	2,302,646,629	3,415,363,564
NET POSITION - RESTRICTED FOR PENSIONS				
Beginning of year	37,280,246,063	4,446,418,008	41,726,664,071	38,311,300,507
End of year	$ 39,259,545,408	$ 4,769,765,292	$ 44,029,310,700	$ 41,726,664,071

See accompanying Notes to the Financial Statements.

Notes to the Financial Statements

Note 1 - Plan Descriptions

The Board of Trustees of the Public School Retirement System of Missouri administers two separate retirement systems, the Public School Retirement System of Missouri (PSRS) and the Public Education Employee Retirement System of Missouri (PEERS). The Board of Trustees consists of seven members, three of whom are elected PSRS active members, one an elected active member of PEERS and three persons appointed by the governor, one of whom must be a retired member of either PSRS or PEERS.

The funds of the two Systems are managed simultaneously. Investments of the Systems are combined in a commingled investment pool as allowed by state statute. Each System owns an equity position in the pool and receives proportionate investment income from the pool in accordance with their respective ownership percentage. Each System's allocated share of each type of investment in the pool is shown on the Statements of Fiduciary Net Position. Investment gains and losses are reported in the Statements of Changes in Fiduciary Net Position. Each System's assets may be used only for the payment of benefits to the members of the separate System in accordance with the statutes governing that System as well as expenses required to administer the System.

The Public School Retirement System of Missouri (PSRS)

PSRS is a mandatory cost-sharing multiple employer retirement system for all full-time certificated employees and certain part-time certificated employees of all public school districts in Missouri (except the school districts of St. Louis and Kansas City) and all public community colleges. The System also includes certificated employees of PSRS, Missouri State Teachers' Association, Missouri State High School Activities Association, and certain employees of the state of Missouri who elected to remain covered by PSRS under legislation enacted in 1986, 1987 and 1989. The majority of PSRS members are exempt from Social Security contributions. In some instances, positions may be determined not to be exempt from Social Security contributions. Any PSRS member who is required to contribute to Social Security comes under the requirements of Section 169.070 (9) RSMo, known as the "2/3's statute." PSRS members required to contribute to Social Security are required to contribute two-thirds of the approved PSRS contribution rate and their employer is required to match the contribution. The members' benefits are further calculated at two-thirds the normal benefit amount.

PSRS was established as an independent trust fund by the Missouri General Assembly effective August 1, 1945. Statutes governing the System are found in Sections 169.010-169.141 and Sections 169.560-169.595 RSMo. It is a defined benefit plan providing service retirement, death and disability benefits to its members. Members are vested for service retirement benefits after accruing five years of service. Individuals who (a) are at least age 60 and have a minimum of five years of service, (b) have 30 years of service, or (c) qualify for benefits under the "Rule of 80" (service and age total at least 80) are entitled to a monthly benefit for life, which is calculated using a 2.5% benefit factor. Actuarially age-reduced benefits are available for members with five to 24.9 years of service at age 55 or with 25 years of service (if not yet age 55). Members who are younger than age 55 and who do not qualify under the "Rule of 80" but have between 25 and 29.9 years of service may retire with a lesser benefit factor. Members that are three years beyond normal retirement can elect to have their lifetime monthly benefits actuarially reduced in exchange for the right to also receive a one-time partial lump sum (PLSO) payment at retirement equal to 12, 24, or 36 times the Single Life benefit amount. Annual cost-of-living adjustments (COLAs) are provided for eligible service and disability retirees and for surviving beneficiaries receiving payments under optional benefit plans, up to a lifetime maximum of 80% of the original benefit amount.

For a more detailed summary of benefits for the members of PSRS, refer to the *Summary Plan Description* in the *Actuarial Section* of this report.

Contributions – PSRS members were required to contribute 14.5% of their annual covered salary during fiscal year 2018. Employers were required to match the contributions made by employees. The contribution rate is set each year by the PSRS/PEERS Board of Trustees upon the recommendation of the independent actuary within the contribution restrictions set in Section 169.030 RSMo. The annual statutory increase in the total contribution rate may not exceed 1% of pay. Administrative costs are financed through investment earnings. Contributions for employees of the State of Missouri were made by the state in accordance with the actuarially determined contribution rate needed to fund current costs and prior service costs of state employees as authorized in Section 104.342.8 RSMo.

Members – The number of PSRS members and benefit recipients served by the System at June 30, 2018:

Retirees and beneficiaries receiving benefits			61,295
Inactive members entitled to, but not yet receiving benefits			8,697
Active members:	Vested	59,798	
	Non-vested	18,902	
Total active members			78,700
Other inactive members and terminated accounts			8,827
Total			157,519

Employers – PSRS had 533 contributing employers during fiscal year 2018.

The Public Education Employee Retirement System of Missouri (PEERS)

PEERS is a mandatory cost-sharing multiple employer retirement system for all public school district employees (except the school districts of St. Louis and Kansas City), employees of the Missouri Association of School Administrators, and public community college employees (except the Community College of St. Louis). Employees of covered districts who work 20 or more hours per week on a regular basis and who are not contributing members of the Public School Retirement System of Missouri (PSRS) must contribute to PEERS. Employees of PSRS who do not hold Missouri educator certificates also contribute to PEERS.

PEERS was established as a trust fund by the Missouri General Assembly effective October 13, 1965. Statutes governing the System are found in Sections 169.600 - 169.715 and Sections 169.560-169.595 RSMo. The statutes place responsibility for the operation of PEERS on the Board of Trustees of the Public School Retirement System of Missouri.

PEERS is a defined benefit plan providing service retirement and disability benefits to its members. Members are vested for service retirement benefits after accruing five years of service. Individuals who (a) are at least age 60 and have a minimum of five years of service, (b) have 30 years of service, or (c) qualify for benefits under the "Rule of 80" (service and age total at least 80) are entitled to a monthly benefit for life, which is calculated using a 1.61% benefit factor. Members qualifying for "Rule of 80" or "30-and-out" are entitled to an additional temporary .8% benefit multiplier until reaching minimum Social Security age (currently age 62). Actuarially age-reduced retirement benefits are available with five years of service at age 55. Members who are younger than age 55 and who do not qualify under the "Rule of 80" but have between 25 and 29.9 years of service may retire with a lesser benefit factor. Members that are three years beyond normal retirement can elect to have their lifetime monthly benefits actuarially reduced in exchange for the right to also receive a one-time partial lump sum (PLSO) payment at retirement equal to 12, 24, or 36 times the Single Life benefit amount. Annual cost-of-living adjustments (COLAs) up to a lifetime maximum of 80% of the original benefit amount are provided for eligible service and disability retirees and for surviving beneficiaries receiving payments under optional benefit plans.

For a more detailed summary of benefits for the members of PEERS, refer to the *Summary Plan Description* in the *Actuarial Section* of this report.

Contributions – PEERS members were required to contribute 6.86% of their annual covered salary during fiscal year 2018. Employers were required to match the contributions made by their employees. The contribution rate is set each year by the PSRS/PEERS Board of Trustees upon the recommendation of the independent actuary within the contribution restrictions in Section 169.620 RSMo. The annual statutory increase in the total contribution rate may not exceed 0.5% of pay. Administrative costs proportional to its membership size are reimbursed by PEERS to the Public School Retirement System of Missouri (PSRS) and are financed through investment earnings.

Members - The number of PEERS members and benefit recipients served by the System at June 30, 2018:

Retirees and beneficiaries receiving benefits			30,360
Inactive members entitled to, but not yet receiving benefits			6,480
Active members:	Vested	26,971	
	Non-vested	21,578	
Total active members			48,549
Other inactive members and terminated accounts			28,929
Total			114,318

Employers – PEERS had 530 contributing employers during fiscal year 2018.

Note 2 – Summary of Significant Accounting Policies

Basis of Accounting

For financial reporting purposes, the Systems adhere to accounting principles generally accepted in the United States of America. The Systems apply all applicable pronouncements of the Governmental Accounting Standards Board (GASB).

The Systems' financial statements, notes to the financial statements, and required supplementary information were prepared in conformity with GASB Statement No. 67, *Financial Reporting for Pension Plans*, as amended. GASB Statement No. 67 addresses accounting and financial reporting requirements for pension plans. Significant requirements include an actuarial calculation of total and net pension liability. It also includes comprehensive footnote disclosures regarding the pension liability, the sensitivity of the net pension liability to the discount rate and extensive investment activity disclosures. The total pension liability, determined in accordance with GASB Statement No. 67, is presented in Note 5 - Net *Pension Liability of Employers.*

The financial statements of both Systems were prepared using the accrual basis of accounting. For both Systems, member and employer contributions are recognized when due, pursuant to formal commitments and statutory requirements. Benefits and refunds are recognized when due and payable in accordance with the statutes governing the Systems. Expenses are recognized when the liability is incurred, regardless of when payment is made. Administrative expenses are funded through investment earnings.

Cash

Cash includes cash on hand, demand deposits, and short-term investments with original maturities of three months or less from the date of acquisition.

Receivables

Receivables consist primarily of contributions owed and yet to be remitted by employers, pending investment trades and interest and dividends payable to the Systems as of the end of each fiscal year.

Method Used to Value Investments

Investments are reported at fair value. The fair value of investments is based on published market prices and quotations from major investment brokers at current exchange rates, as available. Many factors are considered in arriving at fair value. Fixed income securities not traded on a national or international exchange are based on equivalent values of comparable securities with similar yield and risk. The value of private equity, private credit and real estate investments that do not have an established market is determined based upon the most current net asset values and activities through year end. When values are not readily available, alternative investments are valued based on a good faith determination by the General Partner.

GASB Statement No. 72 addresses accounting and reporting issues related to fair value measurements. The Statement requires disclosures to be made about fair value measurements, the level of fair value hierarchy, and valuation techniques. Comprehensive footnote disclosure regarding this Statement is presented in Note 4 - *Deposits, Investments and Securities Lending Program*.

Capital Assets

The building and other capital assets are owned by PSRS and are stated at cost less depreciation accumulated since acquisition. The stated value does not purport to represent replacement or realized value. Costs of major additions and improvements are capitalized. Expenditures for maintenance and repairs are charged to operations as incurred. Depreciation is calculated using the straight-line method, with estimated lives ranging from three to 40 years in the following major classes: computers and software, three years; vehicles, five years; equipment, five years; building and land improvements, 15 years; pension administration system, 20 years; building, 40 years.

PSRS allocates depreciation expense to PEERS for the use of capital assets.

Estimates

The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of net position restricted for pension benefits at June 30, 2018. Actual results could differ from those estimates.

Total Columns

The financial statements include total column information for the prior year. Such information does not include sufficient detail to constitute a presentation in conformity with U.S. generally accepted accounting

principles. Accordingly, such information should be read in conjunction with both Systems' financial statements for the year ended June 30, 2017, from which the information was derived. Certain reclassifications have been made to the 2017 totals to conform with the classifications for 2018.

Note 3 – Designations of Net Position – Restricted for Pensions

The Systems designate the net position – restricted for pensions for the following specific purposes:

Public School Retirement System of Missouri

	2018
Designated for Members' Contributions (Member Reserves) – Accumulation of active and terminated member contributions plus interest.	$ 8,003,690,876
Designated for the Payment of Benefits to Present Retirees – Transfers from Member Reserves at retirement and an actuarially determined transfer from Operating Reserves to fund the System's obligation for benefit payments and cost-of-living adjustments to current retirees and beneficiary recipients.	28,811,151,317
Designated for Operating Expenses/Benefits to Future Retirees (Operating Reserves) – Accumulation of employer contributions and investment income used to fund future benefit payments, interest on member accounts and, administration and maintenance expenses of the System.	2,444,703,215
Net Position – Restricted For Pensions	$ 39,259,545,408

Public Education Employee Retirement System of Missouri

	2018
Designated for Members' Contributions (Member Reserves) – Accumulation of active and terminated member contributions plus interest.	$ 1,048,403,163
Designated for the Payment of Benefits to Present Retirees – Transfers from Member Reserves at retirement and an actuarially determined transfer from Operating Reserves to fund the System's obligation for benefit payments and cost-of-living adjustments to current retirees and beneficiary recipients.	2,678,123,569
Designated for Operating Expenses/Benefits to Future Retirees (Operating Reserves) – Accumulation of employer contributions and investment income used to fund future benefit payments, interest on member accounts and, administration and maintenance expenses of the System.	1,043,238,560
Net Position – Restricted For Pensions	$ 4,769,765,292

Note 4 – Deposits, Investments and Securities Lending Program

Custodial Credit Risk

Custodial credit risk for deposits is the risk that, in the event of the failure of a depository financial institution, the Systems will not be able to recover deposits or will not be able to recover collateral securities that are in the possession of an outside party. The custodial credit risk for investments is the risk that, in the event of the failure of the counterparty to a transaction, the Systems would not be able to recover the value of investment or collateral securities that are in the possession of an outside party. To mitigate custodial credit risk, the Systems require that all deposits be 100% collateralized with securities held in the Systems' name and held by a third party agent.

Deposits

Cash balances include short-term securities held by the custodial bank in a pooled short-term investment fund and operating balances held by the depository banks.

At June 30, 2018, the PSRS carrying amount of deposits at the depository bank was $13,610,803 and the bank balance was $8,799,828. Of the bank balance, $250,000 was covered by federal depository insurance. In addition, the deposits were collateralized with U.S. agency securities held by a third-party institution in the System's name, totaling $10,069,016. An additional $9,031,677 was held in overnight repurchase agreements with a book value of $9,031,677. The overnight repurchase agreements were collateralized with U.S. agency securities held by a third-party institution in the System's name totaling $9,031,677.

At June 30, 2018, the PEERS carrying amount of deposits at the depository bank was $1,543,450 and the bank balance was $673,564. Of the bank balance, $250,000 was covered by federal depository insurance. In addition, the deposits were collateralized with U.S. agency securities held by a third-party institution in the System's name, totaling $2,283,810. An additional $724,487 was held in overnight repurchase agreements with a book value of $724,487. The overnight repurchase agreements were collateralized with U.S. agency securities held by a third-party institution in the System's name totaling $724,487.

Investment Policy and Asset Allocation

Funds for both Systems that are in excess of a safe operating balance are invested under policies and procedures established by the Board of Trustees. Chapter 169.040 RSMo as amended effective August 13, 1984, authorizes any investment which a prudent person acting in a like capacity and familiar with similar matters would use in the conduct of an enterprise of a like character and with like aims. Any person with fiduciary responsibility with respect to the Systems is covered by this "prudent person" rule.

The Board of Trustees of PSRS and PEERS approved the commingling of assets for purposes of investment as allowed by state statute. In order to implement this change, PSRS and PEERS adopted the Missouri Education Pension Trust Agreement. The Missouri Education Pension Trust (MEPT) is managed by the PSRS and PEERS Board of Trustees and Investment Staff. Effective July 1, 2013, the invested assets of the Systems were pooled and invested in MEPT. All assets held by MEPT are for the exclusive benefit of PSRS and PEERS. Each of the Systems has equity in MEPT based on funds contributed and earnings allocated. Earnings of MEPT are allocated based on the average daily balances of each of the respective Systems. Individual investments in MEPT are not specifically identified to the respective Systems. For financial statement presentation, MEPT assets, liabilities, revenues, and expenses have been allocated to and presented in each respective system in the basic financial statements as required by investment pools. Due to the fact all invested assets are invested in MEPT, the rate of return for each of the Systems is approximately the same.

The Systems' policy in regard to the allocation of invested assets is established and may be amended by the Board of Trustees. System assets are managed on a total return basis with a long-term objective of achieving and maintaining a fully funded status for the benefits provided by the Systems. The Board of Trustees amended the long term asset allocation at their June 2016 Trustees' meeting. The long-term target for Public Credit was decreased from 12.0% to 7.0%, which resulted in Public Risk Assets decreasing from 60.0% to 55.0%. Private Equity increased from 10.5% to 12.0%, Private Real Estate increased from 7.5% to 9.0% and Private Credit increased from 2.0% to 4.0%, resulting in Private Risk Assets increasing from 20.0% to 25.0%. Implementation of the amended long-term targets will be achieved over a number of years through a disciplined investment approach. The policy benchmarks will change over time as the Systems make meaningful progress towards the new long-term targets. The table on the following page illustrates the Systems' Board of Trustees approved asset allocation as of June 30, 2018.

Investment Type	Long-term Target	Policy Ranges
Public Risk Asset Programs		
U.S. Public Equity	27.0%	16% - 48%
Public Credit	7.0%	0% - 20%
Hedged Assets	6.0%	0% - 25%
Non-U.S. Public Equity	15.0%	8% - 28%
Total Public Risk Assets	**55.0%**	**35% - 75%**
Safe Assets		
U.S. Treasuries	16.0%	0% - 40%
U.S. TIPS	4.0%	0% - 40%
Cash Equivalents	0.0%	0% - 10%
Total Safe Assets	**20.0%**	**10% - 40%**
Private Risk Asset Programs		
Private Equity	12.00%	4% - 15%
Private Real Estate	9.00%	4% - 12%
Private Credit	4.00%	0% - 8%
Total Private Risk Assets	**25.00%**	**10% - 30%**
Total Fund	**100.0%**	

The Systems categorize their fair value measurements within the fair value hierarchy established by U.S. generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset and gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (level 1 measurements) and the lowest priority to unobservable inputs (level 3 measurements). The Systems have classified the fair value measurements on the following page in accordance with the Board approved asset allocation discussed above. The classifications will not directly reconcile to total investments per the Statements of Fiduciary Net Position due to the considerations of cash holdings, other liabilities and accruals.

Level 1 - Unadjusted quoted prices for identical instruments in active markets.

Level 2 - Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs are observable.

Level 3 - Valuations derived from valuation techniques in which significant inputs are unobservable.

Investments that are measured at fair value using the net asset value (NAV) per share (or its equivalent) as a practical expedient are not classified in the fair value hierarchy.

In instances where inputs used to measure fair value fall into different levels in the fair value hierarchy, fair value measurements in their entirety are categorized based on the lowest level input that is significant to the valuation. The Systems' assessment of the significance of particular inputs to these fair value measurements requires judgment and considers factors specific to each asset or liability. The tables on the following page show the fair value leveling of the investments for the Systems.

Short-term securities generally include investments in money market-type securities reported at cost which approximates market or fair value.

Equities within all assets classes that are classified in Level 1 are valued using prices quoted in active markets for those securities. Equity and equity derivative securities classified in Level 2 are securities whose values are derived daily from associated traded securities. Equity securities classified in Level 3 are valued with last trade data having limited trading volume.

Fixed income securities and derivatives within all assets classes that are classified in Level 2 are valued using either a bid evaluation or a matrix pricing technique. Bid evaluations may include market quotations, yields, maturities, call features and ratings. Matrix pricing is used to value securities based on the securities relationship to benchmark quoted prices. Such securities include U.S. Treasuries, corporate and agency bonds, bank loans, and mortgage backed securities. Level 2 fixed income securities have non-proprietary information that was readily available to market participants, from multiple independent sources, which are known to be actively involved in the market.

Investments and Derivatives Measured at Fair Value

Investments by fair value level	Total at 6/30/2018	Fair Value Measurements Level 1	Level 2	Level 3
U.S. Treasuries and TIPS				
U.S. Treasuries	$ 7,510,796,187	$ -	$ 7,510,796,187	$ -
Total U.S. Treasuries and TIPS	7,510,796,187	-	7,510,796,187	-
U.S. public equities				
Equities	6,914,489,364	6,914,489,364	-	-
U.S. Treasuries	601,747,163	-	601,747,163	-
Sovereign Debt	49,042,070	-	49,042,070	-
Total U.S. public equities	7,565,278,597	6,914,489,364	650,789,233	-
Non-U.S. public equities				
Equities	4,848,636,502	4,847,865,070	-	771,432
Total Non-U.S. public equities	4,848,636,502	4,847,865,070	-	771,432
Short term investments				
Short term investment fund	901,562,258	-	901,562,258	-
Total Short term investments	901,562,258	-	901,562,258	-
Public debt				
Corporate Bonds	1,817,805,464	-	1,817,805,464	-
Bank Loans	375,857,286	-	375,857,286	-
U.S. Treasuries	99,214,165	-	99,214,165	-
Equities	909,770	306,495	603,269	6
Municipal Bonds	14,528,997	-	14,528,997	-
Total Public Debt	2,308,315,682	306,495	2,308,009,181	6
Hedged assets				
U.S. Treasuries	505,394,046	-	505,394,046	-
Equities	272,617,558	272,617,558	-	-
Corporate Bonds	40,527,761	-	40,527,761	-
Agency Bonds	7,766,453	-	7,766,453	-
Total Hedged assets	826,305,818	272,617,558	553,688,260	-
Private equity				
Equities	6,600,598	6,600,598	-	-
Total Private equity	6,600,598	6,600,598	-	-
Total investments by fair value level	$ 23,967,495,642	$ 12,041,879,085	$11,924,845,119	$ 771,438
Total investments measured at the NAV ***(See detailed schedule on the following page)***	**$ 19,721,290,730**			
Total Investments measured at fair value	**$ 43,688,786,372**			

Investment derivative instruments:	6/30/2018	Level 1	Level 2	Level 3
Equity total return swaps	$ (9,399,561)	$ -	$ (9,399,561)	$ -
Interest rate swaps	591,232	-	591,232	-
Foreign currency forwards	(42,134,694)	-	(42,134,694)	-
Total investment derivative instruments	**$ (50,943,023)**	**$ -**	**$ (50,943,023)**	**$ -**

	6/30/2018	Level 1	Level 2	Level 3
Total invested securities lending collateral	**$ $374,910,695**	**$ -**	**$ 374,910,695**	**$ -**

Investments Measured at the NAV	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Public Equity Investments				
Passive U.S Equity Funds	$ 3,160,416,421	$ -	Daily	1 day
Passive Non-U.S. Equity Fund	465,803,927	-	Daily	2 days
Active Non-U.S. Equity Funds	1,967,240,220	-	Monthly	15 - 30 days
Total Public Equity Investments	5,593,460,568	-		
Hedge Fund Investments				
Asset Allocation/Global Macro	942,090,935	-	Monthly	5 days
Distressed Debt/Credit	766,902,443	-	Quarterly, semi-annual	65 - 90 days
Diversified Beta	124,829,027	-	Quarterly	30 days
Equity Focused	1,600,540,098	-	Monthly, quarterly	5 - 60 days
Multi-Strategy	2,830,857,824	-	Monthly, quarterly	15 - 120 days
Total Hedge Fund Investments	6,265,220,327	-		
Private Risk Investments				
Private Equity	4,223,617,401	3,232,781,546	Not eligible	N/A
Private Credit	364,051,618	621,594,140	Not eligible	N/A
Private Real Estate - closed end funds	1,013,039,916	1,046,559,897	Not eligible	N/A
Private Real Estate - open end funds	2,261,900,900	100,000,000	Quarterly	15 - 180 days
Total Private Risk Investments	7,862,609,835	5,000,935,583		
Total investments measured at the NAV	$ 19,721,290,730	$ 5,000,935,583		

The fair values of investments in certain public equity, hedged assets, and private risk assets are based on the investments' net asset value (NAV) per share (or its equivalent) and are presented in the above table. Investments that are measured at fair value using the net asset value (or its equivalent) as a practical expedient are not classified in the fair value hierarchy.

Public Equity Investments

The public equity investments include three passive U.S. equity funds, one passive non-U.S. equity fund and four active non-U.S. equity funds. The passive equity funds provide for basic market exposure with daily liquidity while the four active funds provide active investment strategies in the global equity and emerging markets.

Hedged Assets

The hedged assets investment strategy provides diversification and reduced volatility to the total portfolio. The purpose of this program is to enhance the overall risk/return profile through the inclusion of specialized investment strategies that typically generate returns in a different fashion (i.e., absent a high correlation to equities or bonds).

Asset Allocation/Global Macro includes investments in two funds with the strategy of taking long and short positions based on top-down macroeconomic analysis (i.e., interest rates, foreign exchange rates, and commodity prices). Global strategies involve long and short positions in securities of diverse geographical regions such as developed and emerging markets.

Distressed Debt/Credit includes investments in two funds which seek returns by capitalizing on opportunities in financially distressed companies' debt and credit securities.

Diversified Beta includes investments in three funds with a risk parity approach which focuses on the allocation of risk across the portfolio.

Equity Focused includes investments in seven funds with the strategy of taking long positions in attractive equity securities and short positions in unattractive equity securities.

Multi-Strategy includes investments in eleven funds which represent a broad style of investing that seeks diverse sources of alpha generation and positive absolute returns by employing a variety of investment strategies. Strategies utilized may include, but are not limited to, convertible bond arbitrage, equity long/short, statistical arbitrage, and merger arbitrage.

Private Risk Assets

Private risk investments are typically very long term in nature, not publicly traded and relatively illiquid. Investments are made in limited partnerships where redemptions are restricted over the life of the partnership. During the life of the partnerships, distributions are received as underlying portfolio investments are realized.

Private Equity investments provide financing for start-up companies, private middle market companies, firms in financial distress and public and non-public firms seeking buyout financing. Private equity investments can be classified into three basic sub-asset class categories: Venture Capital, Buyouts, and Debt-Related.

Private Credit investments are comprised primarily of debt-related investments that provide a current yield along with equity participation (usually warrants). Primary strategies are distressed debt, bankruptcy restructurings, mezzanine debt, bank loans, and other credit-drive or debt-related strategies.

Real Estate investments are intended to provide exposure to a diversified portfolio of institutional quality private real estate investments that will provide meaningful, consistent returns, and act as a hedge against inflation and a diversifier to the overall investment portfolio. The real estate portfolio includes closed-end funds where distributions from each investment will be received as the underlying investments are liquidated and open-end funds which offer redemption options.

Rate of Return

For the year ended June 30, 2018, the money-weighted rate of return, net of all investment expenses and fees, was 8.7%. The money weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested. Time weighted returns (geometric return) for the year ended June 30, 2018 net of all investment expenses and fees, was 8.7%.

Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributed to the magnitude of the Systems' investment in a single issue. To mitigate this risk, the Systems' investment policy prohibits investing more than 5% of the total investment portfolio into any single financial institution or issuer, excluding U.S. government securities. At June 30, 2018, the Systems did not have more than 5% of total investments in a single issue except for U.S. government securities.

Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. The Systems' investment policy restricts duration as a means of managing its exposure to fair value losses arising from increased interest rates. In addition, each manager must follow guidelines established relative to the duration of its benchmark. The portfolios are continually monitored to ensure compliance with these guidelines. The following table includes collateral pledged for securities lending collateral. The maturities of all debt securities are presented below:

Security Type	Fair Value at June 30, 2018	< 1 year to maturity	1 to 5 years to maturity	6 to 10 years to maturity	Over 10 years to maturity
U.S. treasuries	$ 8,714,159,015	$ 2,084,694,564	$ 3,608,350,002	$ 2,072,466,949	$ 948,647,500
Agencies	20,757,535	16,113,284	4,644,251	-	-
Corporate bonds	2,234,190,511	62,555,878	1,043,576,632	1,062,451,177	65,606,824
Sovereign debt	49,042,070	49,042,070	-	-	-
Repurchase agreements	158,472,890	158,472,890	-	-	-
Commercial paper	46,925,554	46,925,554	-	-	-
Certificate of deposit	129,513,661	129,513,661	-	-	-
Derivatives	(267,999)	(859,231)	-	-	591,232
Municipals	14,528,997	-	13,874,877	654,120	-
Bank deposits	901,562,258	901,562,258	-	-	-
Commingled Funds (see note)					
Bridgewater STIF II	27,108,962	27,108,962	-	-	-
Wells Fargo Government Fund	15,000,000	15,000,000	-	-	-
Invesco Government Fund	15,000,000	15,000,000	-	-	-
Bridgewater US IL Bond Fund	10,140,450	-	-	10,140,450	-
Bridgewater International Bond Fund	12,393,207	-	-	-	12,393,207
Currency	5,450,259	5,450,259	-	-	-
Total	$12,353,977,370	$ 3,510,580,149	$ 4,670,445,762	$ 3,145,712,696	$ 1,027,238,763
Percentage of Total Fixed Income	**100%**	**28%**	**38%**	**26%**	**8%**

Note: Commingled Funds are presented at the weighted average maturity. These funds do not have a single maturity date; however, the underlying securities have maturity dates. To more accurately reflect the interest rate risk of the Systems, these weighted averages are displayed.

The following table includes the debt maturities for the Systems' deposits and repurchase agreements collateral.

Security Type	Fair Value at June 30, 2018	< 1 year to maturity	1 to 5 years to maturity	6 to 10 years to maturity	Over 10 years to maturity
PSRS - Agencies	$ 19,100,694	$ 3,433,899	$ 839,071	$ 5,355,246	$ 9,472,478
PEERS - Agencies	3,008,297	-	852,822	698,002	1,457,473

Credit Risk

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. The Systems do not have a single investment policy designating the minimum allowable credit rating; however, each manager must follow guidelines established specifically for its managed portfolio. The portfolios are continually monitored to ensure compliance with these guidelines. The following table includes collateral pledged for securities lending collateral. The Systems' debt investments by credit rating category as of June 30, 2018 are presented in the following table.

Security Type	Fair Value at June 30, 2018	%	FDIC Insured	AAA	AA	A	BBB	BB	B	CCC	Not Rated
U.S. treasuries	$ 8,714,159,015	72%	$ -	$ 8,714,159,015	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Agencies	20,757,535	0%	-	20,757,535	-	-	-	-	-	-	-
Corporate bonds	2,234,190,511	19%	-	4,641,866	97,987,128	661,399,229	954,556,106	211,485,565	266,368,970	17,459,452	20,292,195
Sovereign debt	49,042,070	0%	-	49,042,070	-	-	-	-	-	-	-
Repurchase agreements	158,472,890	1%	-	3,472,890	-	155,000,000	-	-	-	-	-
Commercial paper	46,925,554	0%	-	32,936,865	-	13,988,689	-	-	-	-	-
Certificates of deposit	129,513,661	1%	-	30,001,999	-	99,511,662	-	-	-	-	-
Derivatives	(267,999)	0%	-	-	-	-	-	-	-	-	(267,999)
Municipals	14,528,997	0%	-	13,874,877	654,120	-	-	-	-	-	-
Bank Deposits	901,562,258	7%	901,562,258	-	-	-	-	-	-	-	-
Commingled Funds (see note)											
Bridgewater STIF II	27,108,962	0%	-	27,108,962	-	-	-	-	-	-	-
Wells Fargo Government Fund	15,000,000	0%	-	15,000,000	-	-	-	-	-	-	-
Invesco Government Fund	15,000,000	0%	-	15,000,000	-	-	-	-	-	-	-
Bridgewater US IL Bond Fund	10,140,450	0%	-	-	10,140,450	-	-	-	-	-	-
Bridgewater International Bond Fund	12,393,207	0%	-	-	12,393,207	-	-	-	-	-	-
Currency	5,450,259	0%	-	-	-	-	-	-	-	-	5,450,259
Total	$ 12,353,977,370	100%	$ 901,562,258	$ 8,925,996,079	$121,174,905	$ 929,899,580	$ 954,556,106	$ 211,485,565	$ 266,368,970	$ 17,459,452	$25,474,455
Percentage of Total Fixed Income	**100%**		**7%**	**72%**	**1%**	**8%**	**8%**	**2%**	**2%**	**0%**	**0%**

Note: Commingled Funds are presented at the weighted average credit quality. These funds do not carry a rating in and of themselves; however, the underlying securities are all rated. To more accurately reflect the credit risk of the Systems, these weighted averages are displayed. Obligations of the U.S. government or obligations explicitly guaranteed by the U.S. government are not required to be disclosed; however, we feel it shows a more true picture of our fixed income holdings.

All collateral pledged in support of the Systems' deposits and repurchase agreements was held in agency securities with a quality rating of AA.

Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or a deposit. The Systems do not have a single investment policy designating the allowable exposure to foreign currency; however, each manager must follow guidelines established specifically for its managed portfolio. The portfolios are continually monitored to ensure compliance with these guidelines. The Systems' exposure to foreign currency risk as of June 30, 2018 is presented in the following table.

Currency	Debt	Equity	Currency/Short Term	Total
Australian Dollar	$ -	$ 150,707,016	$ 640,115	$ 151,347,131
Brazilian Real	-	67,871,790	(618,595)	67,253,195
British Pound Sterling	13,300,106	351,568,306	1,431,444	366,299,856
Canadian Dollar	-	170,469,058	(1,082,553)	169,386,505
Chilean Peso	-	8,326,570	70,230	8,396,800
Colombian Peso	-	3,767,943	36,078	3,804,021
Czech Koruna	-	11,617,051	11,907	11,628,958
Danish Krone	-	54,233,009	(125,697)	54,107,312
Egyptian Pound	-	12,677,514	378,633	13,056,147
Euro Currency	58,859,993	1,289,273,322	(20,659,492)	1,327,473,823
Hong Kong Dollar	-	424,419,215	(2,812,493)	421,606,722
Hungarian Forint	-	10,616,564	(143,915)	10,472,649
Indian Rupee	-	148,341,799	315,018	148,656,817
Indonesian Rupiah	-	20,535,219	294,691	20,829,910
Israeli Shekel	-	5,299,335	272,614	5,571,949
Japanese Yen	49,042,070	613,359,774	1,725,036	664,126,880
Malaysian Ringgit	-	36,583,139	236,286	36,819,425
Mexican Peso	-	12,994,060	253,723	13,247,783
New Taiwan Dollar	-	91,573,231	618,224	92,191,455
New Turkish Lira	-	18,236,737	582,404	18,819,141
New Zealand Dollar	-	25,478,714	570,640	26,049,354
Norwegian Krone	-	22,817,687	183,032	23,000,719
Peruvian Nuevo Sol	-	678,307	14,211	692,518
Philippine Peso	-	17,152,634	32	17,152,666
Polish Zloty	-	6,074,604	57,071	6,131,675
Qatari Rial	-	15,878,039	8,380	15,886,419
Russian Ruble	-	6,456,982	(87,259)	6,369,723
Singapore Dollar	-	53,621,529	344,318	53,965,847
South African Rand	-	67,689,377	79,752	67,769,129
South Korean Won	-	151,225,001	5,002,821	156,227,822
Swedish Krona	-	43,032,007	515,002	43,547,009
Swiss Franc	-	265,741,475	538,036	266,279,511
Thailand Baht	-	39,772,910	150,537	39,923,447
UAE Dirham	-	5,949,905	143,695	6,093,600
Yuan Renminbi	-	823,774	158,366	982,140
Total	**$ 121,202,169**	**$ 4,224,863,597**	**$(10,897,708)**	**$ 4,335,168,058**

Derivatives

Derivatives are generally defined as investment instruments whose cash flows or fair values are derived from the value of some other asset or index. The Systems are parties to derivatives which have off-balance sheet risk. These derivative instruments are used in the normal course of business to generate earnings and reduce exposure to fluctuations in market conditions. The Systems are exposed to various types of credit, market, and legal risk related to these investments. Investment staff monitors these types of investments with extreme care and is not aware of any undue risks at this time. All derivatives are considered investments. Derivatives are reported at fair value on the Statements of Fiduciary Net Position based on quoted market prices when available. In the instances that quoted market prices are unavailable, pricing is obtained via independent pricing sources.

The fair value balances and notional amounts of derivative instruments outstanding as of June 30, 2018, classified by type are as follows:

	Fair Value at June 30, 2018		
Investment Derivatives	**Classification**	**Amount**	**Notional**
Swaps			
Pay-fixed interest rate swap	Investments, at fair value	$ 591,232	$ 10,000,000
Total return swaps - equity	Investments, at fair value	(9,399,561)	2,126,574,137
Total swaps		**(8,808,329)**	**2,136,574,137**
Futures			
Equity futures long	Investments, at fair value	-	186,754,147
Equity futures short	Investments, at fair value	-	136,930,351
Treasury futures long	Investments, at fair value	-	118,219,203
Treasury futures short	Investments, at fair value	-	104,273,360
Commodity futures long	Investments, at fair value	-	18,864,090
Total futures		**-**	**565,041,151**
Foreign currency forwards net receivable/payable	Investment Sales and Purchases	(42,134,694)	-
Total Investment Derivatives		**$ (50,943,023)**	**$2,701,615,288**

Swaps - The Systems' investment managers may enter into various swaps including interest rate swaps, credit default swaps and equity and total return swaps. Swaps represent an agreement between two parties to exchange sequences of cash flows over a period in the future. In the most common type of interest rate swap arrangement, one party agrees to pay fixed interest payments on designated dates to a counterparty who, in turn, agrees to make return interest payments that float with some reference rate. A credit default swap is a contract whereby the credit risk associated with an investment is transferred by entering into an agreement with another party, who in exchange for periodic fees, agrees to make payments in the event of a default or other predetermined credit event. A total return swap is a contract in which one party makes payments based on a set rate, either fixed or variable, while the other party makes payments based on the return of the underlying asset. The underlying asset is typically an index, bond, etc. Gains and losses on swaps are determined based on market values and are recorded in net appreciation (depreciation) in fair value of investments on the Systems' Statements of Changes in Fiduciary Net Position. Net gains on swaps of $307.5 million were recognized for the fiscal year ended June 30, 2018.

Futures - Futures represent commitments to purchase (asset) or sell (liability) securities at a future date and at a specified price. Futures contracts are traded on organized exchanges (exchange traded) thereby minimizing the Systems' credit risk. The net change in the value of futures contracts is settled daily in cash with the exchanges. Net gains or losses resulting from the daily settlements are included in net appreciation (depreciation) in fair value of investments on the Systems' Statements of Changes in Fiduciary Net Position. The Systems recognized net gains on futures contracts of $20.5 million during the fiscal year ended June 30, 2018.

Options - Options represent or give buyers the right, but not the obligation, to buy (call) or sell (put) an asset at a preset price over a specified period. The option's price is usually a small percentage of the underlying asset's value. As a writer of financial options, the Systems' investment managers receive a premium at the outset of the agreement and bear the risk of an unfavorable change in the price of the financial instrument underlying the option. As a purchaser of financial options, the Systems' investment managers pay a premium at the outset of the agreement and the counterparty bears the risk of an unfavorable change in the price of the financial instrument underlying the option. Net gains or losses resulting from such obligations are included in net appreciation (depreciation) in fair value of investments on the Systems' Statements of Changes in Fiduciary Net Position. The Systems had no option activity during the fiscal year ended June 30, 2018.

Currency forwards - Currency forwards represent forward foreign exchange contracts that are entered into in order to hedge the exposure to changes in foreign currency rate on the foreign currency dominated portfolio holdings. A forward foreign exchange contract is a commitment to purchase or sell a foreign currency at a future date at a negotiated forward rate. The gain or loss arising from the difference between the original contracts and the closing of such contracts is included in net appreciation (depreciation) in fair value of investments on the Systems' Statements of Changes in Fiduciary Net Position. The Systems recognized net losses on such contracts of $24.0 million during the fiscal year ended June 30, 2018.

Derivative Risk - Derivatives that are exchange traded are not subject to credit risk. No derivatives held are subject to custodial credit risk.

At June 30, 2018 the counterparties' credit ratings for currency forwards, options and swaps are subject to credit risk as shown below:

The Systems are exposed to interest rate risk on their interest rate swaps. As the variable portion of the swaps move in the market, the Systems' exposure increases and decreases. The Systems are exposed to termination risk. The Systems' investment managers or their counterparties may terminate a derivative if the either party fails to perform under the terms of the contract.

The Systems' derivatives are governed by ISDA Master Agreements between the Systems and the Counterparties. These agreements set forth collateral requirements and applicable netting arrangements. Foreign currency risks are reflected on page 37.

The Systems could be exposed to risk if the counterparties to the contracts are unable to meet the terms of the contracts. The Systems' investment managers seek to control this risk through counterparty credit evaluations and approvals, counterparty credit limits, and exposure monitoring procedures. The Systems anticipate that the counterparties will be able to satisfy their obligations under the contracts.

The derivative financial instruments discussed involve, to varying degrees, elements of market risk to the extent of future market movements in excess of the amounts recognized in the Statements of Fiduciary Net Position. Market risk arises from the potential unfavorable change in the value of the underlying instruments. The contract or notional amounts of these instruments reflect the extent of the Systems' involvement in each class of financial instrument; however, these amounts do not represent the exposure to market loss. Additional derivatives may be held in limited partnerships and commingled funds that are not reflected below.

Derivative Counterparty Credit Ratings

Quality Rating	Swaps	Forwards	Total
AA	$ -	$ 621,361	$ 621,361
A	(10,846,786)	(42,606,335)	(53,453,121)
BBB	-	(149,720)	(149,720)
Total subject to credit risk	**$(10,846,786)**	**$(42,134,694)**	**$(52,981,480)**

Security Lending Activity

Under the "prudent person" authority of the governing statutes and in accordance with the policies set by the Board of Trustees, the Systems lend securities to broker-dealers and banks pursuant to a form of loan agreement. The Systems' custodial bank is authorized to act as the Systems' agent to lend available securities to approved broker-dealers and banks subject to the receipt of acceptable collateral.

During the fiscal year, the Systems' custodial bank lent, on behalf of the Systems, securities to participating broker-dealers. The broker-dealers must provide collateral in the form of cash. The Systems did not impose restrictions during the fiscal year on the amount of loans that the custodial bank made on their behalf. Borrowers were required to deliver collateral for each loan equal to: (1) in the case of loaned securities denominated in U.S. dollars or whose primary trading market was located in the United States, or sovereign debt issued by foreign governments, 102% of the fair value of the loaned securities and (2) in the case of loaned securities not denominated in U.S. dollars or whose primary trading market was not located in the United States, 105% of the fair value of the loaned securities.

Pursuant to the lending agreement, the custodial bank has an obligation to provide a form of indemnification to the Systems in the event of default by a borrower. There were no violations of the contractual provisions nor were there any borrower or lending agent default losses during the fiscal year.

The fair value of securities on loan as of June 30, 2018 was $366,376,192. On June 30, 2018 the Systems had no credit risk exposure to borrowers as the cash and securities collateral amounts received exceeded amounts on loan. Loans are generally terminable on demand. However, with the prior approval of the Systems, loans may be made on the basis of a specified termination date, with or without providing for the right of the Systems to terminate or substitute equivalent securities. As of June 30, 2018, there were no term loans.

Cash collateral is invested in separately managed accounts in accordance with the investment guidelines approved by the Systems. The primary investment objective is the preservation of principal. As of June 30, 2018, the cost basis of the invested cash collateral totaled $374,895,161 and the estimated fair value totaled $374,910,695.

The Systems' recognized net depreciation of $4,223 for the year ended June 30, 2018 on the invested collateral account. Such is reported as net (depreciation) appreciation in fair value of security lending collateral on the Statements of Changes in Fiduciary Net Position.

The weighted average duration of invested collateral as of June 30, 2018 was 12 days and an average final maturity of approximately 34 days. Because the loans were terminable at will, their duration did not match the duration of the investments made with cash collateral.

Note 5 – Net Pension Liability of Employers

The components of the net pension liability of the Systems' employers at June 30, 2018 are as follows:

	Total Pension Liability (TPL) (a)	Plan Fiduciary Net Position-Restricted for Pensions (b)	Net Pension Liability (NPL) (a - b)	Plan Fiduciary Net Position as a % of TPL (b/a)	Covered Payroll (c)	Employers' NPL as a % of Covered Payroll ((b-a)/c)
PSRS	$ 46,702,001,873	$ 39,259,545,408	$ 7,442,456,465	84.1%	$ 4,759,665,456	156.4%
PEERS	$ 5,542,477,610	$ 4,769,765,292	$ 772,712,318	86.1%	$ 1,636,007,948	47.2%

Actuarial Assumptions - Actuarial valuations of the Systems involve estimates of the reported amount and assumptions about probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality and future salary increases. Amounts determined regarding the net pension liability are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future. The Board of Trustees adopts actuarial assumptions, each of which individually represents a reasonable long-term estimate of anticipated experience for the Systems, derived from experience studies conducted every fifth year. The most recent comprehensive experience studies were completed in June 2016. All economic and demographic assumptions were reviewed and updated, where appropriate, based on the results of the study and effective with the June 30, 2016 valuation. The next experience studies are scheduled for 2021. For the June 30, 2018 valuations, the investment rate of return was reduced from 7.6% to 7.5% and was updated in accordance with the funding policies amended by the Board of Trustees at their October 2018 meeting. All other assumptions remained consistent with the prior year.

The Schedules of Employers' Net Pension Liability presents multi-year trend information about whether the plan net positions are increasing or decreasing over time relative to the total pension liability. These schedules are presented in the required supplementary information following the notes to the financial statements. The total pension liability was determined by an actuarial valuation as of June 30, 2018. A summary of the significant actuarial assumptions as of June 30, 2018 are shown on the following page.

Measurement Date	**June 30, 2018**
Valuation Date	**June 30, 2018**
Actuarial Cost Method	Entry Age Normal
Investment Rate of Return	7.50%
Inflation	2.25%
Total Payroll Growth	
PSRS	2.75% per annum, consisting of 2.25% inflation, 0.25% additional inflation due to the inclusion of health care costs in pension earnings, and 0.25% of real wage growth.
PEERS	3.25% per annum, consisting of 2.25% inflation, 0.50% additional inflation due to the inclusion of health care costs in pension earnings, and 0.50% of real wage growth.
Individual Salary Growth	
PSRS	3.00% - 9.50%, depending on service and including 2.25% inflation, 0.25% additional inflation due to the inclusion of health care costs in pension earnings, 0.25% of real wage growth for productivity, and real wage growth for merit, promotion and seniority of 0.25% to 6.75%.
PEERS	4.00% - 11.00%, depending on service and including 2.25% inflation, 0.50% additional inflation due to the inclusion of health care costs in pension earnings, 0.50% of real wage growth for productivity, and real wage growth for merit, promotion and seniority of 0.75% to 7.75%.
Cost-of-Living Increases	
PSRS	1.65% compounded annually, beginning on the second January after retirement and capped at 80% lifetime increase. The assumption increases from 1.25% to 1.65% over eight years.
PEERS	1.65% compounded annually, beginning on the fourth January after retirement and capped at 80% lifetime increase. The assumption increases from 1.25% to 1.65% over eight years.
Mortality Assumption	
Actives	
PSRS	RP 2006 White Collar Employee Mortality Table, multiplied by an adjustment factor of 0.75 at all ages for both males and females, with static projection using the 2014 SSA Improvement Scale to 2028.
PEERS	RP 2006 Total Dataset Employee Mortality Table, multiplied by an adjustment factor of 0.75 at all ages for both males and females, with static projection using the 2014 SSA Improvement Scale to 2028.
Non-Disabled Retirees, Beneficiaries and Survivors: PSRS	RP 2006 White Collar Mortality Table multiplied by the adjustment factors shown in the table below, with static projections using the 2014 SSA Improvement Scale to 2028.

Age	Males	Females
<60	1.00	1.00
60-74	0.89	0.67
75-89	1.05	0.91
>=90	1.05	1.16

PEERS	RP 2006 Total Dataset Mortality Table multiplied by the adjustment factors shown in the table below, with static projections using the 2014 SSA Improvement Scale to 2028.

Age	Males	Females
<60	1.00	1.00
60-74	1.49	0.77
75-89	1.27	1.03
>=90	1.16	1.04

Disabled Retirees	RP 2006 Disabled Retiree Mortality Table, with static projections using the 2014 SSA Improvement Scale to 2028.

Sensitivity of Net Pension Liability

The sensitivity of the net pension liability of employers to changes in the discount rate is presented below. The net pension liability of employers calculated using the discount rate of 7.5% is presented as well as what the employers' net pension liability would be using a discount rate that is 1.0% lower (6.5%) or 1.0% higher (8.5%) than the current rate.

		1% Decrease (6.5%)	Current Rate (7.5%)	1% Increase (8.5%)
PSRS	Net Pension Liability (Asset)	$ 13,341,159,520	$ 7,442,456,465	$ 2,540,018,945
PEERS	Net Pension Liability (Asset)	$ 1,455,105,055	$ 772,712,318	$ 200,392,249

Long-Term Expected Rate of Return

The long-term expected rate of return on investments was determined in accordance with Actuarial Standard of Practice (ASOP) No. 27, Selection of Economic Assumptions for Measuring Pension Obligations. ASOP No. 27 provides guidance on the selection of an appropriate assumed rate of return. The long-term expected rate of return on the Systems' investments was determined using a building-block method in which best-estimate ranges of expected future real rates of returns (expected returns, net of investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the Systems' target allocation as of June 30, 2018 are summarized below along with the long term geometric return. Geometric return (also referred to as the time weighted return) is considered standard practice within the investment management industry. Geometric returns represent the compounded rate of growth of a portfolio. The method eliminates the effects created by cashflows.

Asset Class	Target Asset Allocation	Long-term Expected Real Return Arithmetic Basis	Weighted Long-term Expected Real Return Arithmetic Basis
U.S. Public Equity	27.0 %	5.16 %	1.39 %
Public Credit	7.0 %	2.17 %	0.15 %
Hedged Assets	6.0 %	4.42 %	0.27 %
Non-U.S. Public Equity	15.0 %	6.01 %	0.90 %
U.S. Treasuries	16.0 %	0.96 %	0.15 %
U.S. TIPS	4.0 %	0.80 %	0.03 %
Private Credit	4.0 %	5.60 %	0.22 %
Private Equity	12.0 %	9.86 %	1.18 %
Private Real Estate	9.0 %	3.56 %	0.32 %
Total	100.0 %		4.61 %
		Inflation	2.25 %
		Long term arithmetical nominal return	6.86 %
		Effect of covariance matrix	0.64 %
		Long term expected geometric return	7.50 %

The long-term expected rate of return used to measure the total pension liability was 7.5% as of June 30, 2018 and is consistent with the long-term expected geometric return on plan investments. The actuarial assumed rate of return was 8.0% from 1980 through fiscal year 2016. The Board of Trustees adopted a new actuarial assumed rate of return of 7.75% effective with the June 30, 2016 valuation based on the actuarial experience studies and asset-liability study conducted during the 2016 fiscal year. The Board of Trustees further reduced the assumed rate of return to 7.6% effective with the June 30, 2017 valuation and then again with the June 30, 2018 valuation to 7.5%. The projection of cash flows used to determine the discount rate assumed that employer contributions would be made at the actuarially calculated rate computed in accordance with assumptions and methods stated in the funding policy adopted by the Board of Trustees, which requires payment of the normal cost and amortization of the unfunded actuarially accrued liability in level percent of employee payroll installments over 30 years utilizing a closed period, layered approach. Based on this assumption, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members.

Note 6 – Retirement Plans

Section 401(a) Defined Benefit Plan

All full-time System employees holding valid Missouri educator certificates are covered by PSRS. All other eligible employees are members of PEERS. Both Systems provide retirement and disability benefits, annual cost-of-living adjustments and death benefits to plan members and beneficiaries. Chapter 169 RSMo contains the statutory provisions of both Systems.

PSRS members were required to contribute 14.5% of their annual covered salary during fiscal years 2018, 2017 and 2016. PSRS, as the employer, was required to match that amount. The contribution rate is set each year by the Board of Trustees upon the recommendation of the independent actuary within the contribution restrictions set in Section 169.030 RSMo. Employer contributions to PSRS totaled $67,424 for the 2018 fiscal year, $47,196 for the 2017 fiscal year and $34,685 for the 2016 fiscal year. The amounts for these years are equal to the required contributions. PEERS members were required to contribute 6.86% of their annual covered salary during fiscal years 2018, 2017 and 2016. PSRS, as the employer, was required to match that amount. The contribution rate is set each year by the Board of Trustees upon the recommendation of the independent actuary within the contribution restrictions in Section 169.620 RSMo. Employer contributions to PEERS totaled $756,101 for the 2018 fiscal year, $734,395 for the 2017 fiscal year and $707,492 for the 2016 fiscal year. The amounts for these years are equal to the required contributions.

PSRS and PEERS, as the administrators for the defined pension plans, are also participating employers of the Systems. The administrative expenses of the Systems are included in the deductions to the Systems' fiduciary net position. While the employer contributions of the other participating employers are funded from outside revenue sources, the employer contributions of PSRS and PEERS are funded from sources already recognized as revenues, such as earnings on plan investments or contributions paid by the other participating employers. Attempting to allocate a portion of the net pension liability to PSRS and PEERS would result in an allocation of the net pension liability to the other participating employers.

Accordingly, PSRS and PEERS will exclude its contributions from the employer proportionate share calculation for the reporting of a net pension liability, by assigning itself a proportionate share of 0%.

Section 457 Deferred Compensation Plan

A voluntary Section 457 deferred compensation plan is administered to provide additional retirement benefits for employees. The plan provides for employer-matching contributions up to a set maximum. The total contributions are subject to the limitations established in IRC Section 457. The Board of Trustees has authority to establish the employer contribution levels. For most employees, the System will match $50 plus 0.52% of salary per month. For certain employees, the System will make employer-paid contributions of $18,000 per year plus $6,000 in catch up contributions, if eligible. This is governed by individual employment contracts as approved by the Board of Trustees.

All employees immediately vest in the employer-matching and employer-paid contributions. Employer-matching contributions totaled $114,922 and employer-paid contributions totaled $66,000 for the 2018 fiscal year. Employee contributions totaled $407,521 for the 2018 fiscal year.

Maintenance of individual member accounts and custody of assets have been contracted to a third-party administrator and investment custodian. Total contributions are sent directly to the third-party administrator by the employer. Employees can self-direct investments of their contributions and their respective share of matching contributions in a number of investment options. Because the System does not hold the plan's assets and does not have significant administrative responsibilities, the plan's assets and changes in net assets are not reported in the Systems' financial statements.

The Systems established an unfunded Section 457(f) non-qualified deferred compensation plan for certain employees. The plan is subject to Internal Revenue Code section 457(f), and to the extent applicable, Internal Revenue Code section 409A. Employees approved for participation in the plan by the Systems' Board of Trustees may acquire a vested interest in a deferred compensation award which is credited to the account of the member under terms approved by the Board of Trustees. The value of the member's account shall be subject to a risk of forfeiture based on the applicable vesting schedule determined for the member. As of June 30, 2018, employees had a vested interest under the plan of $33,050 and disbursements of $25,968 were made from the plan for the year then ended.

Section 401(a) Defined Contribution Plan

The Systems established a 401(a) defined contribution plan for certain employees. The employees are approved for participation in the plan by the Systems' Board of Trustees. The plan is a tax qualified plan under Section 401(a) of the Internal Revenue Code and all contributions by or on behalf of employees are tax deferred until time of withdrawal. All employees immediately vest in employer-paid contributions. Employer-paid contributions totaled $53,000 for the 2018 fiscal year.

Maintenance of individual member accounts and custody of assets have been contracted to a third-party administrator and investment custodian. Total contributions are sent directly to the third-party administrator by the employer. Employees can self-direct investments of their contributions in a number of investment options. Because the System does not hold the plan's assets and does not have significant administrative responsibilities, the plan's assets and changes in net assets are not reported in the Systems' financial statements.

Note 7 – Other Post-Employment Benefit Plans

Post-Employment Staff Retiree Healthcare Plan

Plan Description, Funding Policy and Benefits Provided – The Public School Retirement System of Missouri Staff Retiree Healthcare Program (SRHP) is a single-employer defined benefit other post-employment benefit (OPEB) plan administered by PSRS. SRHP is administered as required by RSMo 169.590. SRHP provides a healthcare premium implicit rate subsidy to eligible staff retirees and their dependents provided they pay 100% of the blended healthcare premium. The blended healthcare premium is based on all active and retired employees. Retiree healthcare benefits are funded on a pay-as-you-go basis, with premiums determined annually. Therefore, no formal trust has been established for the SRHP. The PSRS/PEERS Board of Trustees determines the funding of benefits and any benefit amendments. There is no continuing obligation to provide benefits beyond each calendar year. SRHP does not issue a stand-alone public financial report.

Employees covered by benefit terms:

Retirees and spouses of retirees receiving benefits	26
Active employees	131
Total	157

As previously discussed in the Management's Discussion and Analysis, the Systems implemented GASB Statement No. 75 during fiscal year 2018. A remeasurement of the beginning of the fiscal year OPEB liability is required under GASB Statement No. 75. The impacts of this remeasurement can be made as a prior period adjustment. However, due to the overall impact to the Systems being immaterial, the remeasurement is reflected in current year activity and noted below.

OPEB Liability – The components of the net OPEB Liability of the SRHP as of June 30, 2018 are as follows:

Total OPEB liability - Beginning of the year	$ 2,050,100
Remeasurement of June 30, 2017 OPEB liability	1,479,740
Service cost	152,625
Interest cost	116,484
Experience (gains) losses	110,476
Assumption changes	(104,653)
Plan amendments	-
Benefit payments	(15,909)
Total OPEB Liability - End of year	$ 3,788,863
OPEB Plan Fiduciary Net Position	$ -
Net OPEB Liability	$ 3,788,863

OPEB Expense – The components of the OPEB expense for the year ended June 30, 2018 are as follows:

Remeasurement of June 30, 2017 OPEB liability	$ 1,479,740
Service Cost	152,625
Plan Amendments	-
Interest Costs	116,484
Recognition of deferred (inflows) outflows of resources related to:	
Liability experiences (gains) losses	11,678
Assumption changes (gains) losses	(11,063)
Total Recognition of deferred (inflows) outflows of resources	615
Current year OPEB expense	$ 269,724
Total collective OPEB expense recognized	$ 1,749,464

Actuarial Method and Assumptions - The total OPEB liability was determined by an actuarial valuation as of June 30, 2018. Projections of benefits for financial reporting purposes are based on the substantive plan (the plan as understood by the employer and the plan members) and include the types of benefits provided at the time of each valuation and the historical pattern of sharing of benefit costs between the employer and plan members to that point. The actuarial assumptions and methods used in the valuation are based on prior

plan experience and industry trends. The nature of the plan design and overall plan size does not allow for full scale periodic experience studies; therefore such a study has not been conducted. Actuarial valuations of an ongoing plan involve estimates of the value of reported amounts and assumptions about the probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality and healthcare cost trends. Amounts determined regarding the total OPEB liability and expense are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future.

In the June 30, 2018 actuarial valuation, the following actuarial assumptions and methods were used:

Measurement date	June 30, 2018
Valuation date	June 30, 2018
Actuarial cost method	Entry Age Normal
Actuarial value of assets	No Assets (pay-as-you-go)
Amortization method	Level Percent Open
Discount rate	3.3% per year for June 30, 2015 and prior years 7.75% per year effective June 30, 2016 3.36% per year effective June 30, 2018
Wage inflation	3.5% per year per year for June 30, 2015 and prior years 3.25% per year effective June 30, 2016
Healthcare trend rate	7.5% in fiscal year 2018, decreasing by one-half percentage point per year to an ultimate of 4.5% in fiscal year 2024 and after
Mortality	
Active members	Based on 75% of the RP-2006 Mortality Tables with static projecting to 2028 using the 2014 Improvement Scale.
Non-disabled retirees and beneficiaries	Based on the RP-2006 Mortality Tables with plan-specific experience adjustments and static projection to 2028 using the 2014 SSA Improvement Scale
Disabled retirees	Based on the RP-2014 Disabled Retiree Mortality Table, adjusted to 2006, with static projection to 2018 using the 2014 SSA Improvement Scale

Discount Rate - GASB Statement No. 75 requires plans not administered through a trust to utilize the yield or index rate for 20-year, tax-exempt general obligation municipal bonds with and average rating of AA/Aa or higher. The Systems utilized the US. General Obligation AA Municipal Bond Yield Curve for 20 years for the June 30, 2018 valuation. The June 30, 2018 rate was 3.36% and the June 30, 2017 rate utilized for remeasurement was 3.17%.

Deferred Inflows and Outflows of Resources - As of June 30, 2018, the Systems reported deferred outflows of resources and deferred inflows of resources from the following sources related to the SRHP:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Balance of Deferred Outflows and Inflows Due to:		
Differences between expected and actual experience	$ 98,798	$ -
Changes of assumptions	-	93,590
Total	$ 98,798	$ 93,590

Due to the implementation of GASB Statement No. 75, the discount rate assumption was changed to the U.S. General Obligation AA Municipal Bond Yield Curve as discussed above. No other assumption changes occurred.

Amounts reported as collective deferred (inflows)/outflows of resources are to be recognized in pension expense as follows:

Year Ending June 30:	
2019	$ (615)
2020	(615)
2021	(615)
2022	(615)
2023	(615)
Thereafter	(2,133)
	$ (5,208)

Sensitivity of the net OPEB liability to changes in the discount rate and health care cost trend rate. – The following table presents the sensitivity of the net OPEB liability to changes in the discount rate. The net OPEB liability calculated using the discount rate of 3.36% is presented as well as what the net OPEB liability would be using a discount rate that is 1.0% lower (2.36%) or 1.0% higher (4.36%) than the current rate.

Discount Rate Sensitivity			
	1% Decrease (2.36%)	Current Rate (3.36%)	1% Increase (4.36%)
Net OPEB Liability	$ 4,368,192	$ 3,788,863	$ 3,304,025

The following table presents the sensitivity of the net OPEB liability to changes in the healthcare trend rate. The net OPEB liability calculated using the healthcare trend rate of 7.5% is presented as well as what the net OPEB liability would be using a healthcare trend rate that is 1.0% lower (6.5%) or 1.0% higher (8.5%) than the current rate.

Trend Rate Sensitivity			
	1% Decrease (6.5%)	Current Rate (7.5%)	1% Increase (8.5%)
Net OPEB Liability	$ 3,204,053	$ 3,788,863	$ 4,525,739

Post-Employment Health Plan

PSRS maintains a Post-Employment Health Plan (“PEHP”) for employees. Upon termination, an employee will receive payment at the rate of one day of pay for each two days of accrued sick leave up to 100 days of accrued sick leave (50 days paid). Any days above 100 will be forfeited. All payments under the PEHP in excess of $1,000 will be transferred into a PEHP account which can be used to pay health insurance premiums for the employee or dependent at any time in the future. If an employee is retiring, the payments can be transferred back to PSRS on a monthly basis to cover the cost of health insurance for the retiree. The amount paid into the PEHP was $64,528 for five employees during 2018.

Note 8 – Risk Management

The Systems are exposed to various risks of loss related to natural disasters, errors and omissions, loss of assets, torts, etc. The Systems have chosen to cover such losses through the purchase of commercial insurance. There have been no material insurance claims filed or paid during the past three years.

The Systems have a disaster recovery plan that provides for continued computer operations at a remote location should the retirement office be unavailable for normal operations.

Note 9 – Commitments and Contingencies

Commitments to the future purchase of investments at June 30, 2018 totaled $2,948,021,102.

Total unfunded capital commitments to private real estate, private equity and other alternative investments totaled approximately $5.0 billion as of June 30, 2018. The unfunded commitments are not recorded in the Statements of Fiduciary Net Position.

Certain legal proceedings are pending with PSRS and PEERS arising from normal activities. Although unable to predict the outcome of these matters, the Systems believe the final outcome of these actions will not have a material adverse effect on the Systems’ financial statements.

Public School Retirement System of Missouri and
Public Education Employee Retirement System of Missouri

Required Supplementary Information

Schedules of Changes in the Employers' Net Pension Liability

Public School Retirement System of Missouri

Year Ended:	June 30, 2018	June 30, 2017	June 30, 2016	June 30, 2015	June 30, 2014
Total pension liability					
Service cost	$ 792,276,388	$ 740,176,751	$ 842,548,463	$ 836,085,151	$ 849,712,130
Interest cost	3,346,220,624	3,198,060,384	3,263,288,365	3,019,050,250	2,885,182,982
Difference between actual and expected experience	137,516,335	60,942,067	(641,098,601)	598,417,056	226,591,816
Assumption changes	531,202,248	1,279,805,826	100,247,551	-	-
Plan amendments	-	-	-	-	-
Benefit payments	(2,606,985,013	(2,521,832,399)	(2,430,906,732)	(2,326,196,773)	(2,236,468,407)
Net change in total pension liability	2,200,230,582	2,757,152,629	1,134,079,046	2,127,355,684	1,725,018,521
Total pension liability - beginning of year	$ 44,501,771,291	$ 41,744,618,662	$ 40,610,539,616	$ 38,483,183,932	$ 36,758,165,411
Total pension liability - end of year (a)	$ 46,702,001,873	$ 44,501,771,291	$ 41,744,618,662	$ 40,610,539,616	$ 38,483,183,932
Plan Fiduciary Net Position					
Employer contributions	$ 696,970,398	$ 684,857,718	$ 670,794,045	$ 656,924,899	$ 643,989,869
Member contributions	726,996,161	719,625,373	704,785,734	689,187,215	679,390,918
Net investment return	3,173,735,918	4,104,123,251	533,180,245	1,447,169,205	4,927,198,588
Benefit payments, including refunds of member contributions	(2,606,985,013)	(2,521,832,399)	(2,430,906,732)	(2,326,196,773)	(2,236,468,407)
Administrative and other expenses	(11,418,119)	(10,497,712)	(11,562,965)	(10,013,601)	(8,919,201)
Net change in plan fiduciary net position	1,979,299,345	2,976,276,231	(533,709,673)	457,070,945	4,005,191,767
Plan fiduciary net position - beginning of year	$ 37,280,246,063	$ 34,303,969,832	$ 34,837,679,505	$ 34,380,608,560	$ 30,375,416,793
Plan fiduciary net position - end of year (b)	$ 39,259,545,408	$ 37,280,246,063	$ 34,303,969,832	$ 34,837,679,505	$ 34,380,608,560
Net pension liability - end of year (a-b)	$ 7,442,456,465	$ 7,221,525,228	$ 7,440,648,830	$ 5,772,860,111	$ 4,102,575,372

Public Education Employee Retirement System of Missouri

Year Ended:	June 30, 2018	June 30, 2017	June 30, 2016	June 30, 2015	June 30, 2014
Total pension liability					
Service cost	$ 161,028,014	$ 150,975,958	$ 161,391,660	$ 156,599,641	$ 159,672,364
Interest cost	397,675,858	374,497,203	372,184,628	333,780,285	315,131,402
Difference between actual and expected experience	117,686	3,076,923	(51,257,557)	45,518,402	(14,308,876)
Assumption changes	61,921,295	140,420,925	65,420,724	-	-
Plan amendments	-	-	-	-	-
Benefit payments	(287,634,108)	(269,268,101)	(250,390,477)	(235,070,181)	(216,624,810)
Net change in total pension liability	333,108,745	399,702,908	297,348,978	300,828,147	243,870,080
Total pension liability - beginning of year	$ 5,209,368,865	$ 4,809,665,957	$ 4,512,316,979	$ 4,211,488,832	$ 3,967,618,752
Total pension liability - end of year (a)	$ 5,542,477,610	$ 5,209,368,865	$ 4,809,665,957	$ 4,512,316,979	$ 4,211,488,832
Plan Fiduciary Net Position					
Employer contributions	$ 115,103,143	$ 111,239,585	$ 106,717,021	$ 103,624,310	$ 100,699,735
Member contributions	121,467,850	118,446,790	114,257,497	110,443,660	106,420,656
Net investment return	381,523,965	485,046,867	60,317,387	163,719,526	544,154,941
Benefit payments, including refunds of member contributions	(287,634,108)	(269,268,101)	(250,390,478)	(235,070,010)	(216,624,810)
Administrative and other expenses	(7,113,566)	(6,377,808)	(6,981,573)	(5,629,551)	(4,840,432)
Net change in plan fiduciary net position	323,347,284	439,087,333	23,919,854	137,087,935	529,810,090
Plan fiduciary net position - beginning of year	$ 4,446,418,008	$ 4,007,330,675	$ 3,983,410,821	$ 3,846,322,886	$ 3,316,512,796
Plan fiduciary net position - end of year (b)	$ 4,769,765,292	$ 4,446,418,008	$ 4,007,330,675	$ 3,983,410,821	$ 3,846,322,886
Net pension liability - end of year (a-b)	$ 772,712,318	$ 762,950,857	$ 802,335,282	$ 528,906,158	$ 365,165,946

Note: This schedule is intended to show information for ten years. Additional years will be displayed as they become available.

Public School Retirement System of Missouri and
Public Education Employee Retirement System of Missouri

Required Supplementary Information

Schedules of Employers' Net Pension Liability

Public School Retirement System of Missouri

Year Ended	Total Pension Liability (TPL) (a)	Plan Fiduciary Net Position - Restricted for Pensions (b)	Net Pension Liability (NPL) (a - b)	Plan Fiduciary Net Position as a % of TPL (b/a)	Covered Payroll (c)	Employers' NPL as a % of Covered Payroll ((b-a)/c)
6/30/14	$ 38,483,183,932	$ 34,380,608,560	$ 4,102,575,372	89.3%	$ 4,425,567,630	92.7%
6/30/15	40,610,539,616	34,837,679,505	5,772,860,111	85.8%	4,508,241,581	128.1%
6/30/16	41,744,618,662	34,303,969,832	7,440,648,830	82.2%	4,556,137,282	163.3%
6/30/17	44,501,771,291	37,280,246,063	7,221,525,228	83.8%	4,655,169,121	155.1%
6/30/18	46,702,001,873	39,259,545,408	7,442,456,465	84.1%	4,759,665,456	156.4%

Public Education Employee Retirement System of Missouri

Year Ended	Total Pension Liability (TPL) (a)	Plan Fiduciary Net Position - Restricted for Pensions (b)	Net Pension Liability (NPL) (a - b)	Plan Fiduciary Net Position as a % of TPL (b/a)	Covered Payroll (c)	Employers' NPL as a % of Covered Payroll ((b-a)/c)
6/30/14	$ 4,211,488,832	$ 3,846,322,886	$ 365,165,946	91.3%	$ 1,442,700,979	25.3%
6/30/15	4,512,316,979	3,983,410,821	528,906,158	88.3%	1,469,771,528	36.0%
6/30/16	4,809,665,957	4,007,330,675	802,335,282	83.3%	1,519,081,146	52.8%
6/30/17	5,209,368,865	4,446,418,008	762,950,857	85.4%	1,558,183,433	49.0%
6/30/18	5,542,477,610	4,769,765,292	772,712,318	86.1%	1,636,007,948	47.2%

Note: This schedule is intended to show information for ten years. Additional years will be displayed as they become available.

Public School Retirement System of Missouri and Public Education Employee Retirement System of Missouri

Required Supplementary Information

Schedules of Employer Contributions

Public School Retirement System of Missouri

Year Ended June 30	Actuarially Determined Contribution	Actual Employer Contributions	Contribution Excess/ (Deficiency) [1]	Covered Payroll	Contributions as a Percentage of Covered Payroll
2009	$ 669,643,988	$ 563,454,487	$(106,189,501)	$ 4,334,265,285	13.00%
2010	658,161,150	594,326,122	(63,835,028)	4,402,415,719	13.50%
2011	684,366,766	594,732,137	(89,634,629)	4,248,086,693	14.00%
2012	720,303,976	620,214,231	(100,089,745)	4,277,339,524	14.50%
2013	507,232,268	634,040,335	126,808,067	4,372,691,966	14.50%
2014	608,459,393	643,989,869	35,530,476	4,441,309,441	14.50%
2015	666,438,984	656,924,899	(9,514,085)	4,530,516,545	14.50%
2016	643,155,536	669,953,683	26,798,147	4,620,370,228	14.50%
2017	642,821,624	684,857,718	42,036,094	4,723,156,676	14.50%
2018	533,062,186	696,970,397	163,908,211	4,806,692,393	14.50%

Public Education Employee Retirement System of Missouri

Year Ended June 30	Actuarially Determined Contribution	Actual Employer Contributions	Contribution Excess/ (Deficiency) [1]	Covered Payroll	Contributions as a Percentage of Covered Payroll
2009	$ 96,775,289	$ 85,915,562	$ (10,859,727)	$ 1,374,648,992	6.25%
2010	95,560,084	91,478,725	(4,081,359)	1,407,365,000	6.50%
2011	90,816,155	90,816,155	-	1,369,776,094	6.63%
2012	95,094,785	95,094,785	-	1,386,221,356	6.86%
2013	87,013,816	97,059,313	10,045,497	1,414,858,790	6.86%
2014	98,497,846	100,699,735	2,201,889	1,467,926,166	6.86%
2015	105,739,092	103,624,310	(2,114,782)	1,510,558,455	6.86%
2016	104,011,593	106,654,638	2,643,045	1,554,732,332	6.86%
2017	108,807,233	111,239,585	2,432,352	1,621,568,294	6.86%
2018	97,653,104	115,103,143	17,450,039	1,677,888,382	6.86%

[1] *The annual statutory increase in the total contribution rate may not exceed 1% of pay for PSRS and 0.5% of pay for PEERS. The limitation on contribution increases resulted in a deficiency for some of the years presented. Contributions were funded to the maximum statutory limit each year.*

Public School Retirement System of Missouri and Public Education Employee Retirement System of Missouri

Required Supplementary Information

Schedules of Investment Returns

Year ended June 30:	2018	2017	2016	2015	2014
Annual money-weighted rate of return, net of all investment expenses	8.7%	12.3%	1.6%	4.3%	16.7%
Time-weighted rate of return, net of all investment expenses	8.7%	12.3%	1.6%	4.3%	16.7%

Note: This schedule is intended to show information for ten years. Additional years will be displayed as they become available.

Public School Retirement System of Missouri and Public Education Employee Retirement System of Missouri

Notes to the Schedules of Required Supplementary Information

The information presented in the required supplementary schedule was determined as part of the actuarial valuation at the date indicated. Additional information as of the latest actuarial valuation follows.

Changes in benefit terms:

PSRS:	The 25-and-Out and 2.55% provisions were extended in 2007 through 2013. In 2013 the state legislature provided a permanent extension of the 25-and-Out provision and extended the 2.55% provision to 2014.
PEERS:	The 25-and-Out and 2.55% provisions were extended in 2007 through 2013. In 2013 the state legislature provided a permanent extension of the 25-and-Out provision.
Changes of assumptions:	In 2006, 2011 and 2016 payroll growth, salary increases, assumed life expectancies and mortality were adjusted to more closely reflect actual experience. In 2011, the inflation rate was adjusted to 2.5% from 3.25% and annual cost- of-living adjustments were calculated in accordance with the then adopted funding policy. In 2016, the inflation rate was adjusted to 2.25% from 2.5%, the investment rate of return from 8.00% to 7.75% and annual cost-of-living adjustments were calculated in accordance with the funding policy as amended in June 2016. During 2016, minor revisions were made to other actuarially assumptions including but not limited to, retirement rates, withdraw rates, etc. The 2016 assumption changes were a result of an actuarial experience study conducted during the 2016 fiscal year. For fiscal year 2017, the investment rate of return was further reduced from 7.75% to 7.6% and the assumption for annual cost-of-living adjustments. For fiscal year 2018, the investment rate of return was further reduced to 7.5%.
Actuarially Methods and Assumptions:	The actuarially determined contribution rates in the schedule of employers' contributions are calculated as of June 30, two years prior to the end of the fiscal year in which contributions are reported. The following actuarial methods and assumptions were used to determine contribution rates reported in the schedule.
Actuarial Cost Method	Entry Age Normal Level Percent of Payroll
Amortization Method	Closed, level percent for 30 years
Remaining amortization period	
PSRS	23.4 years
PEERS	23.6 years
Asset valuation method	5-year smoothing of actual returns above or below expected returns
Measurement Date	**June 30, 2018**
Valuation Date	**June 30, 2018**
Investment Rate of Return	7.50%
Inflation	2.25%
Total Payroll Growth	
PSRS	2.75% per annum, consisting of 2.25% inflation, 0.25% additional inflation due to the inclusion of health care costs in pension earnings, and 0.25% of real wage growth.
PEERS	3.25% per annum, consisting of 2.25% inflation, 0.50% additional inflation due to the inclusion of health care costs in pension earnings, and 0.50% of real wage growth.
Individual Salary Growth	
PSRS	3.00% - 9.50%, depending on service and including 2.25% inflation, 0.25% additional inflation due to the inclusion of health care costs in pension earnings, 0.25% of real wage growth for productivity, and real wage growth for merit, promotion and seniority of 0.25% to 6.75%.
PEERS	4.00% - 11.00%, depending on service and including 2.25% inflation, 0.50% additional inflation due to the inclusion of health care costs in pension earnings, 0.50% of real wage growth for productivity, and real wage growth for merit, promotion and seniority of 0.75% to 7.75%.
Cost-of-Living Increases	
PSRS	1.65% compounded annually, beginning on the second January after retirement and capped at 80% lifetime increase. The assumption increases from 1.25% to 1.65% over eight years.
PEERS	1.65% compounded annually, beginning on the fourth January after retirement and capped at 80% lifetime increase. The assumption increases from 1.25% to 1.65% over eight years.

Public School Retirement System of Missouri and
Public Education Employee Retirement System of Missouri

Notes to the Schedules of Required Supplementary Information - Continued

Measurement Date **June 30, 2018**

Valuation Date **June 30, 2018**

Mortality Assumption

Actives:

PSRS — RP 2006 White Collar Employee Mortality Table, multiplied by an adjustment factor of 0.75 at all ages for both males and females, with static projection using the 2014 SSA Improvement Scale to 2028.

PEERS — RP 2006 Total Dataset Employee Mortality Table, multiplied by an adjustment factor of 0.75 at all ages for both males and females, with static projection using the 2014 SSA Improvement Scale to 2028.

Non-Disabled Retirees, Beneficiaries and Survivors:

PSRS — RP 2006 White Collar Mortality Table multiplied by the adjustment factors shown in the table below, with static projections using the 2014 SSA Improvement Scale to 2028.

Age	Males	Females
<60	1.00	1.00
60-74	0.89	0.67
75-89	1.05	0.91
>=90	1.05	1.16

PEERS — RP 2006 Total Dataset Mortality Table multiplied by the adjustment factors shown in the table below, with static projections using the 2014 SSA Improvement Scale to 2028.

Age	Males	Females
<60	1.00	1.00
60-74	1.49	0.77
75-89	1.27	1.03
>=90	1.16	1.04

Disabled Retirees: RP 2006 Disabled Retiree Mortality Table, with static projections using the 2014 SSA Improvement Scale to 2028.

Public School Retirement System of Missouri and
Public Education Employee Retirement System of Missouri

Required Supplementary Information

Staff Retiree Health Plan – Defined Benefit OPEB Plan

Schedule of Changes in the Net OPEB Liability and Related Ratios

	Year ended: June 30, 2018
Total OPEB Liability - beginning year	$ 2,050,100
Remeasurement of June 30, 2017 OPEB liability	1,479,740
Service cost	152,625
Interest cost	116,484
Experience (gains) losses	110,476
Assumption changes	(104,653)
Plan amendments	-
Benefit payments	(15,909)
Net change in total OPEB liability	$ 3,788,863
OPEB Plan Fiduciary Net Position	$ -
Net OPEB Liability	$ 3,788,863
Covered Payroll	$ 10,742,062
Employer's Net OPEB Liability as a Percentage of Coverage Payroll	35.3%

Note: This schedule is intended to show information for ten years. Additional years will be displayed as they become available.

Public School Retirement System of Missouri and
Public Education Employee Retirement System of Missouri

Schedules of Administrative Expenses

for the year ended June 30, 2018

	PSRS	PEERS	Combined Totals
Personnel services	$ 7,328,193	$ 4,704,593	$ 12,032,786
Professional services			
Actuarial services	254,683	179,941	434,624
Legal services	90,205	163,037	253,242
Financial audit services	57,149	35,027	92,176
Other consultants	55,661	34,115	89,776
Technology consulting	247,524	151,708	399,232
Legislative consulting	27,900	17,100	45,000
Insurance consulting	3,410	2,090	5,500
Total professional services	736,532	583,018	1,319,550
Communications			
Information and publicity	210,170	145,192	355,362
Postage	387,475	252,564	640,039
Member education	12,848	7,237	20,085
Telephone	35,298	21,626	56,924
Total communications	645,791	426,619	1,072,410
Miscellaneous			
Building and utilities	148,055	90,722	238,777
Insurance	86,238	52,855	139,093
Office	761,321	466,616	1,227,937
Staff development	149,912	91,881	241,793
Miscellaneous	174,572	86,178	260,750
Total miscellaneous	1,320,098	788,252	2,108,350
Depreciation expense	988,660	603,653	1,592,313
Total administrative expenses	$ 11,019,274	$ 7,106,135	$ 18,125,409

Public School Retirement System of Missouri and Public Education Employee Retirement System of Missouri

Schedules of Investment Expenses

for the year ended June 30, 2018

	PSRS	PEERS	Combined Totals
Investment management expenses			
U.S. Treasuries and TIPS	$ 4,037,789	$ 448,643	$ 4,486,432
U.S. public equities	55,904,565	6,211,618	62,116,183
Non-U.S. public equities	27,400,942	3,044,551	30,445,493
Public debt	3,627,165	403,018	4,030,183
Private equity	205,351,015	22,816,779	228,167,794
Private credit	14,820,660	1,646,740	16,467,400
Private real estate	48,191,516	5,354,613	53,546,129
Hedged assets	86,660,695	9,628,966	96,289,661
Total investment management expenses	445,994,347	49,554,928	495,549,275
Investment consultant fees	4,816,273	535,142	5,351,415
Custodial bank fees	1,419,716	157,746	1,577,462
Investment staff expenses	4,834,624	540,785	5,375,409
Commission recapture income	(132,372)	(15,945)	(148,317)
Total investment expenses	$ 456,932,588	$ 50,772,656	$ 507,705,244
Security lending expenses			
Agent fees	$ 630,007	$ 70,001	$ 700,008
Broker rebates	1,339,107	148,790	1,487,897
Total security lending expenses	$ 1,969,114	$ 218,791	$ 2,187,905

Public School Retirement System of Missouri and Public Education Employee Retirement System of Missouri

Schedules of Professional Services

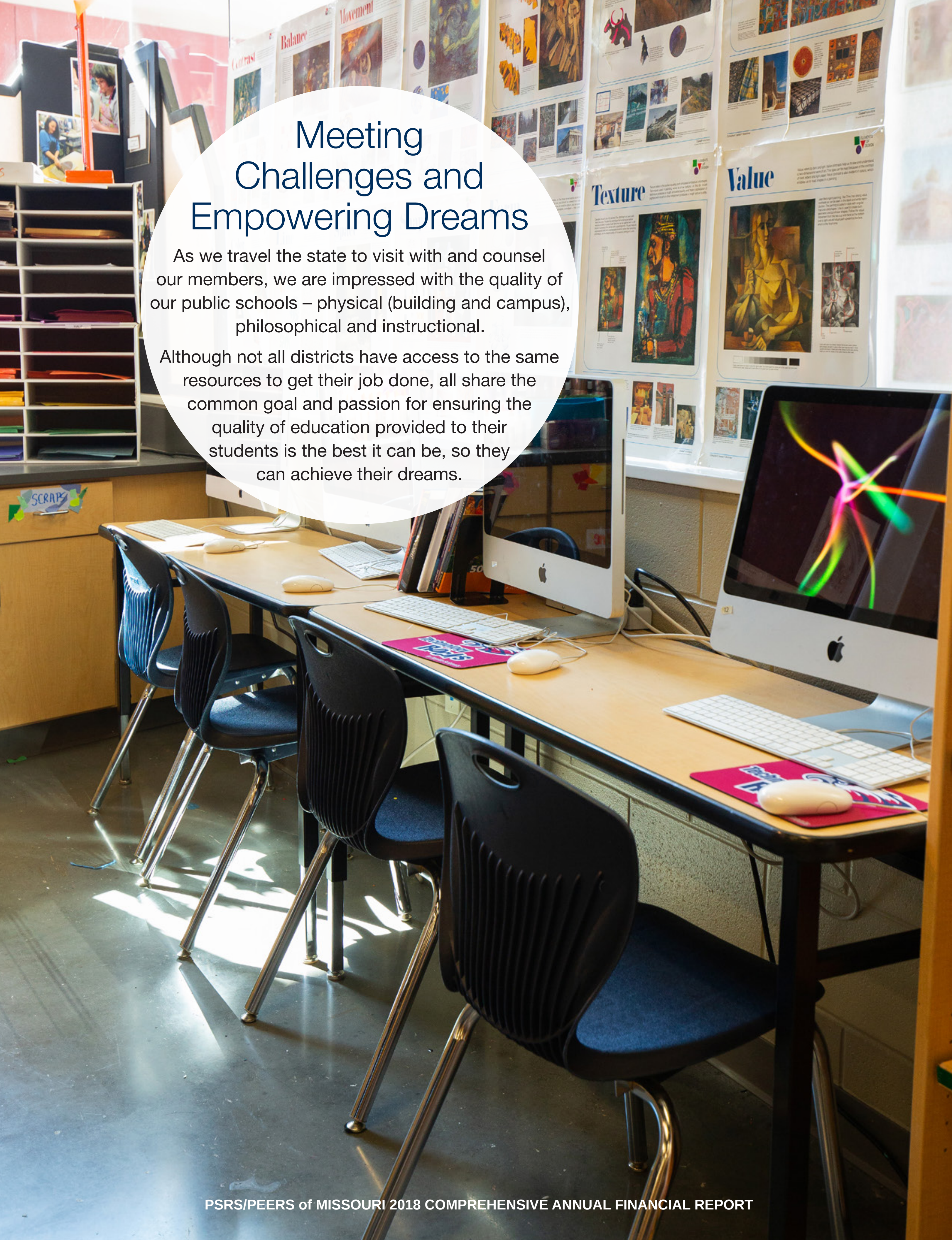
for the year ended June 30, 2018

	PSRS	PEERS	Combined Totals
Actuarial services	$ 254,683	$ 179,941	$ 434,624
Legal expenses	90,205	163,037	253,242
Financial audit services	57,149	35,027	92,176
Other consulting	55,661	34,115	89,776
Technology consulting	247,524	151,708	399,232
Legislative consulting	27,900	17,100	45,000
Insurance consulting	3,410	2,090	5,500
Total fees	$ 736,532	$ 583,018	$ 1,319,550

Meeting Challenges and Empowering Dreams

As we travel the state to visit with and counsel our members, we are impressed with the quality of our public schools – physical (building and campus), philosophical and instructional.

Although not all districts have access to the same resources to get their job done, all share the common goal and passion for ensuring the quality of education provided to their students is the best it can be, so they can achieve their dreams.



Investment Section

Letter from Verus

Verus

September 28, 2018

To the Members of the Board:

Important events in the U.S. occurring during fiscal year 2018 included significant corporate tax reform, the beginnings of an unwind of quantitative easing and the initiation of meaningful changes to trade policy. Including severe market volatility in February and March, the S&P 500 returned 14.4% for the fiscal year.

International (Non- U.S.) markets, particularly in the second-half of the fiscal year, faced a strong U.S. Dollar, more moderate economic and earnings growth, and a fear of the uncertainty surrounding trade. Developed Non- U.S. markets (EAFE) and Emerging Markets returned 6.8% and 8.2%, respectively.

Short-term U.S. Treasury yields rose steadily over the twelve months, outpacing increases in longer term yields, resulting in a flat yield curve at fiscal year-end. The BBC U.S. Treasury Index returned -0.7% for the year as price declines more than offset income returns.

The combined PSRS/PEERS plans, known as the Missouri Education Pension Trust (MEPT), had a total return for the fiscal year of 8.9%, outperforming the Policy Benchmark return of 7.4%. Each of its three major components also outperformed corresponding benchmarks – Public Risk Assets (9.7% v. 8.9%), Safe Assets (-0.1% v. -0.2%), and, most notably, Private Risk Assets (14.6% v. 10.8%).

Verus was retained as the PSRS/PEERS's investment consultant on January 1, 2018. We have spent 2018 becoming familiar with PSRS/PEERS's people, processes and portfolio, focusing most recently on a review of the U.S. Equity portfolios, both Large and Small Capitalization.

Despite what seems like a topsy-turvy world, equity markets have experienced an unusual calm (low volatility), absent the February/March period. Along with the investment staff, we at Verus anticipate an eventual return to normalcy by continuing to maintain and enhance the portfolio's ability to withstand a less friendly investment environment.

The entire Verus organization appreciates our relationship with the PSRS/PEERS and looks forward to a mutually rewarding partnership.

Sincerely,

Barry W. Dennis

Barry W. Dennis
Managing Director

Verus — also known as Verus Advisory™

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Letter from the Chief Investment Officer

PSRS/PEERS

PUBLIC SCHOOL & EDUCATION EMPLOYEE
RETIREMENT SYSTEMS OF MISSOURI

December 3, 2018

To the Members of the Systems:

Throughout this year's Financial Report, you will see the phrase: ***"Education for Today, Retirement for Tomorrow"***. The investment staff, under the direction of the Board of Trustees, is solely focused on providing consistent long-term investment returns that can support retirement benefits and provide financial security to the members of PSRS and PEERS today and tomorrow.

With that in mind, I present the following report on the Systems' investments for the fiscal year ended June 30, 2018 on behalf of the PSRS and PEERS' Board of Trustees and the internal investment staff.

An improving U.S. economy led to above average returns for U.S. stocks and private equity in fiscal year 2018. The strength in these asset classes directly resulted in solid gains for PSRS/PEERS as the Systems' assets increased through investment earnings by almost $3.6 billion from the previous year with a total fund performance of 8.9% for both PSRS and PEERS.

Key Points within this year's Financial Report

As you review the financial information in this report for the fiscal year ended June 30, 2018, it is important to be aware of the following points:

- PSRS and PEERS outperformed the assumed investment return of 7.6%,
- The Systems generated the investment return while taking less risk than the policy benchmark (as measured by standard deviation) and less risk than the majority of comparable public funds over all time periods,
- The PSRS/PEERS internal investment staff and external investment managers added value above the policy benchmark of over $530 million, net of all fees and expenses. This outperformance in 2018 was due to portfolio construction and tactical asset allocation decisions by internal investment staff (overweighting and underweighting asset classes around targets) as well as active management on the part of external managers,
- The PSRS/PEERS investment expenses (including accrued performance-based fees and all internal investment staff expenses) for fiscal year 2018 were 1.16%, or $1.16 for every $100 managed. The investment returns reported throughout this publication are mostly net of these fees. The investment return net of all fees and expenses was 8.7% for PSRS and PEERS,
- The PSRS and PEERS investment returns for fiscal year 2018 and for the last three-year and five-year time periods exceeded 65% of the peer group as defined by the Wilshire TUCS universe of public pension plans with assets in excess of $1 billion,

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- Investment performance throughout this report is calculated using a time-weighted rate of return based on market values, and
- The total invested assets of both PSRS and PEERS were approximately $43.8 billion on June 30, 2018, making the combined entity larger than all other public retirement plans in the state combined, and the 44th largest defined benefit plan in the United States.

Fiscal Year 2018 Year in Review

The internal investment staff, under the direction of the PSRS/PEERS' Board of Trustees, has adopted a disciplined and diversified investment portfolio that includes allocations to multiple asset classes. Over time, every specific asset class within the PSRS/PEERS' investment portfolio performs a valuable function.

In fiscal year 2018, the combined asset allocation provided the Systems with substantial absolute returns, led by above average returns from U.S. stocks and reasonable, yet much lower, returns for global stocks. U.S. stocks returned 14.8% for the fiscal year ended June 30, 2018 (as measured by the Russell 3000 Index), non-U.S. developed stocks moved 6.8% higher (as measured by the MSCI EAFE Index), and emerging market stocks increased 8.2% (as measured by the MSCI Emerging Markets Index). In contrast, the yield on the 10-year Treasury Bond increased from 2.3% at the beginning of the fiscal year to 2.9% on June 30, 2018. This increase in yield contributed to a negative absolute return for the U.S. Treasury Bonds within the PSRS/PEERS' Safe Asset Portfolio.

The PSRS/PEERS non-traditional asset classes provided strong returns in fiscal year 2018. The Hedged Asset Program represented 11.9% of total fund assets at fiscal year-end and generated a 6.3% return. The objective of the Hedged Assets Program is to provide competitive returns, diversification and lower volatility (risk) than the Systems' stock portfolios. Diversification into private equity, private real estate and private credit proved beneficial for the year as the Private Equity Composite returned 19.4%, the Real Estate Composite increased 9.2%, and the Private Credit Composite increased 12.5%.

As noted above, significant absolute returns in most of the major asset classes contributed to the 8.9% return for PSRS and PEERS. Additionally, the investment returns were supported by solid implementation (security selection) and tactical asset allocation decisions. For example, the PSRS/PEERS' Non-U.S. Equity Portfolio outperformed its benchmark (MSCI All Country World Free ex U.S. Index) by 1.0% in fiscal year 2018, while the PSRS/PEERS' Private Equity Portfolio outperformed its benchmark (Russell 3000 Index) by 4.6%. From a portfolio construction and tactical standpoint, the internal investment staff maintained a modest underweight to bonds (both credit and Treasury) throughout the year (due to historically low interest rates and tight credit spreads) and an overweight to hedged assets and stocks (both U.S. and non-U.S.). Additionally, within the Safe Assets Program, a cash position was increased relative to longer maturity Treasury bonds. The underweight to safe assets and credit bonds and the overweight to stocks and hedge assets for the fiscal year provided meaningful contribution to the overall PSRS/PEERS return.

Fiscal Year 2019: The economy and fundamental PSRS/PEERS principles

As I write this annual letter on December 3, 2018, we are five months into fiscal year 2019 and the global economy remains solid with the U.S. labor market strengthening and unemployment declining. However, there are a number of issues which remain a concern to investors, including rising interest

Letter from the Chief Investment Officer, continued

rates, the very late stages of the economic cycle in the U.S. and an increased risk of a prolonged trade war amidst growing geopolitical conflicts. Stocks reacted negatively to some of these concerns in October 2018 under the fear that the Federal Reserve could slow the economy by raising interest rates too much.

Investing in an uncertain environment, as we find ourselves in today, reinforces the Systems' application of the fundamental principles in the management of the PSRS/PEERS' investment portfolio:

- Focus on the long-term investment horizon which requires discipline and patience,
- Balance the long-term investment strategy of PSRS/PEERS with shorter term views as market dynamics change, and
- Manage risk by maintaining adequate liquidity and balancing the portfolio for the heightened possibility of market inflection points.

Fiscal Year 2019: The assumed rate of return

As I wrote last year, the Systems utilized a 7.0% assumed rate of return for the decade of the 1970's. The assumption was increased to 8.0% in 1980 as bond yields increased. This historical assumption was reasonable and supported by market expectations over many years. However, in the current environment, virtually every asset class (including global stocks, despite the recent downturn) is fully valued and interest rates remain below historical norms. As such, we believe that the expected investment returns going forward could be lower than historical returns. To that end, the Board of Trustees, with input from both internal investment staff and external advisors, have worked to reduce the long-term assumed rate of return for the Systems. The Board moved from the 8.0% assumed rate of return in fiscal year 2016 to 7.75% in fiscal year 2017, 7.6% for fiscal year 2018 and 7.5% for fiscal year 2019. We believe that the directional move to a lower assumed rate of return is prudent and in concert with the Board's objective to provide for the long-term security and financial stability of the Systems.

Fiscal Year 2019: Portfolio structure

The PSRS/PEERS investment portfolio remains grounded in three primary categories: Safe Assets, Public Risk Assets and Private Risk Assets. The Board has adopted an Investment Policy that provides the PSRS/PEERS' internal investment staff and external advisors with the flexibility to deviate from the broad categories, and make changes within each category, under appropriate bands. At times the investment staff has deviated significantly from the target allocation as valuations in specific asset classes were attractive relative to historical pricing.

As mentioned previously in this letter, most asset classes appeared close to full valuation at the end of fiscal year 2018 and as we approach the half way point in fiscal year 2019. Consequently, the Systems currently have allocations that are close to the long-term targets for most of the asset classes in the portfolio.

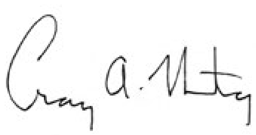
The Safe Assets composite ensures that adequate liquidity is available to meet all PSRS and PEERS benefit payments and cash needs for an extended period of time, regardless of the economic environment. Short-term bonds (cash) have been added to the Safe Asset portfolio in the last year with the expectation for higher interest rates.

The Systems maintain a substantial allocation to Public Risk Assets. The point of emphasis in this category has been to increase active management within the U.S. equity portfolio as market volatility increases. The overall Public Risk composite is primarily balanced between U.S. equities, non-U.S. equities and lower volatility hedge funds. The Hedged Asset portfolio is designed to offer the diversification benefits traditionally associated with bonds but at higher levels of expected return. The Systems experienced this benefit in fiscal year 2018 as the Hedged Asset portfolio increased 6.3% while the Safe Assets portfolio earned mildly negative returns.

Finally, the Systems Private Risk Assets composite will continue to be a focus for the investment staff in fiscal year 2019 with the belief that private equity and private credit can produce returns in excess of the expected public market returns over long periods of time. Furthermore, the PSRS and PEERS allocation to private real estate is expected to provide consistent income that offers a premium over traditional fixed income investments. The nature of private investing requires a process of portfolio construction that takes years to develop. This is particularly true for a plan with the substantial assets of PSRS/PEERS. Over the years, the Systems have continued to build on this successful investment platform that serves as an alternative to traditional public markets. At the close of fiscal year 2018, the Systems had almost $8.0 billion invested in Private Risk Assets.

Under the support and guidance of the Board of Trustees, I am confident that the investment program at PSRS/PEERS will continue to provide the Systems with an excellent opportunity to achieve solid investment returns over future economic and capital market environments. Most importantly, I believe the portfolio is well-positioned to ensure that the ***retirement needs for tomorrow*** are met for all PSRS/PEERS' members.

Respectfully,



Craig A. Husting, CFA
Chief Investment Officer

Investment Policy Summary

The Board of Trustees of the Public School Retirement System of Missouri and Public Education Employee Retirement System of Missouri (PSRS and PEERS, also referred to as the Systems) is charged with the responsibility for investing the assets of the Systems in a manner consistent with the fiduciary standards set forth in the 'prudent person' rule. To that end, the Board has adopted the following principles to guide all investment-related decisions:

1. Act in the exclusive interest of the members of the Systems,
2. Maximize total return within prudent risk parameters, and
3. Preserve the long-term purchasing power of the Systems.

The investment portfolios of PSRS and PEERS represent all contributions to the plans, from members and their employers, as well as all net earnings on these assets. These funds are held in support of both current and future liabilities. In total, approximately 60% of every dollar used to pay retirees is generated from investment earnings[1].

The Board of Trustees of PSRS and PEERS approved the commingling of assets for purposes of investment as allowed by state statute in January 2013. In order to implement this change, PSRS and PEERS adopted the Missouri Education Pension Trust Agreement (MEPT), which is managed by the PSRS and PEERS Board of Trustees and Investment Staff. Effective July 1, 2013, the invested assets of the Systems were pooled and invested in MEPT. All assets held by MEPT are for the exclusive benefit of PSRS and PEERS. Each of the Systems has equity in MEPT based on funds contributed and earnings allocated. Earnings of MEPT are allocated based on the average daily balances of each of the respective Systems. Individual investments in MEPT are not specifically identified to the respective Systems. Due to the fact all invested assets are invested in MEPT, the rate of return for each of the Systems is approximately the same. Therefore, the following discussions focus on MEPT in total and not the individual Systems.

Roles and Responsibilities

Board of Trustees

It is the responsibility of the Board of Trustees (Board) to establish and maintain policies and objectives for all aspects of the Systems' investment program including the determination of long-term policies for risk tolerance and asset allocation.

In keeping with its obligation to serve as the governing fiduciary, any changes to the investment policy or investment implementation manuals require the Board's approval.

As one of the largest public pension funds in the United States, the Systems' operational requirements are complex. In order to properly administer the Systems and carry out investment strategies, the Board relies heavily on both internal staff and external service providers. Due to the number of parties involved, their roles as fiduciaries are clearly identified to ensure distinct lines of responsibility and proper controls exist, while providing increased operational efficiency and elimination of duplication of effort.

Executive Director

The Executive Director (Director) is appointed by and serves at the pleasure of the Board. The Director is responsible for planning, organizing and administering all operations of the Systems under the broad policy guidance and direction of the Board. The Director, with the assistance of the investment staff, monitors the performance of the investment portfolio; ensures that funds are invested in accordance with Board policies; and, ensures that proper internal controls are developed to safeguard the assets of the Systems. In fulfilling these responsibilities, the Director relies heavily on the Chief Investment Officer and external asset consultants.

Chief Investment Officer

The Chief Investment Officer (CIO) serves at the pleasure of the Director yet has a direct, but limited, link to the Board on investment-related issues. The CIO's sole access to the Board is for submission of investment reports, information, or communications required by the investment policy and any other information or opinions specifically requested by the Board with regard to the investment program. The CIO is the individual primarily responsible for providing direction for the investment program. It is the CIO's responsibility to work with the Director, the general consultant, specialty consultants, and other external service providers, with the assistance of the internal staff, in advising the Board on policies related to the investment program. The CIO has responsibilities related to hiring and terminating service providers.

[1] *Based on a twenty-year average for fiscal years 1998-2018.*

Critical functions of the CIO include recommendations for implementation decisions related to the investment plan and for the strategic allocation of the portfolio within broad ranges approved by the Board.

External Asset Consultants

The Systems employ Verus Advisory, Inc. (Verus) as a general consultant and Albourne America, LLC (Albourne), Pathway Capital Management (Pathway) and The Townsend Group (Townsend) as specialty consultants. The Systems conducted a general consultant search during the current year resulting in the selection of Verus. Willis Towers Watson was the previous general consultant from 2011 to December 2017. Verus is an independent resource available to collaborate with the Board and staff on the investment process. This typically includes regular meetings with the Board to provide an independent perspective on the Systems' goals, structure, performance and external service providers. Additionally, Verus may be involved with the strategic allocation shifts for the portfolio.

The specialty consultants work on specific programs within the overall investment program. Albourne is utilized for the Private Credit, Private Equity, Hedged Assets and Alpha Overlay programs. Pathway is a consultant for the Private Equity and Private Credit programs and Townsend consults on the Real Estate program.

External Investment Managers

The Systems employ external investment managers that include external money managers which may be structured as public or private entities in the form of a partnership, limited liability company, trust, separately managed account, commingled account, or some other form of operational structure in which assets may be held by an external custodian selected and monitored by the external manager.

Managers are given explicit written directions detailing their particular assignments or they follow the investment program outlined in their offering documents or Limited Partnership Agreements, and will construct and manage investment portfolios that are consistent with the investment philosophy and disciplines for which they were hired. Discretion is delegated to the managers to carry out investment actions as directed by the Systems.

Master Custodian

JP Morgan Chase Bank, NA (JP Morgan) serves as the master custodian for the Systems. The master custodian holds most cash and securities for the Systems, except in cases where investment in a partnership, commingled account, or unique asset class makes it impossible to do so. The Systems thoroughly evaluate the structure of all investments and their custody arrangements. JP Morgan is responsible for providing the official book of record for investment performance reporting and accounting, and serves as an additional layer of risk control in safekeeping the Systems' assets.

Investment Objective

Based on the long-term investment returns available from a well-diversified, prudently invested portfolio, the Board has adopted an objective to achieve a **total nominal investment return of 7.6% with a real rate of return of at least 5.35% per annum over time**.[2] The Board of Trustees revised the long-term investment return objective to 7.6% effective for fiscal year 2018 investment performance and 7.5% effective for fiscal year 2019 investment performance. The investment objective was previously 8.0% effective from 1980 through fiscal year 2016 and 7.75% effective for fiscal year 2017.

In order to achieve the investment objective, the Systems have developed a portfolio that is prudently invested across a broad array of assets that reflects the long-term nature of the Systems' pension obligations. The principles of diversification, risk control and competitive rates of return provide the framework for selecting an asset allocation that is expected, over longer periods of time and in the aggregate, to give the Systems the most competitive long-term return within a prudent level of risk.

Understanding Risk

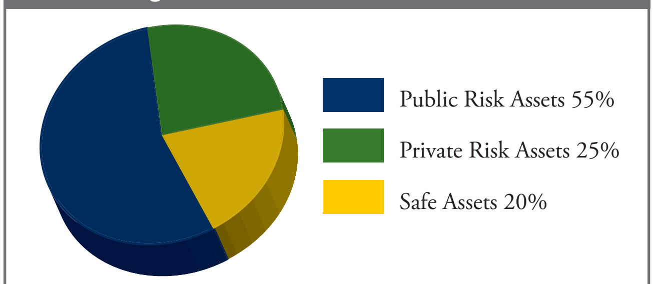
Selection of an appropriate asset allocation is one of the most important decisions made by a retirement plan. Within that asset allocation, it is important to not only consider the expected investment return, but also to understand the risks. The importance of risk consideration for institutional investors is critical to long-term success. To that end, the Systems employ an

[2] The real rate of return is the rate by which the long-term total return exceeds the long-term inflation rate. The Board of Trustees shall employ an actuarial consultant for purposes of determining the inflation rate to be used in calculating the pension obligations. The assumed inflation rate as of June 30, 2018 was 2.25% per annum.

effective and intuitive risk-based approach to setting and reporting the asset allocation decision. The Systems developed a risk-based asset allocation to clearly define the prudent risks taken within its investment portfolios. The Systems consider a variety of risks including, but not limited to, liquidity risk, volatility, tail risk (the possibility that an investment will move much more than expected) and the ability to meet the Systems' assumed rate of return when structuring the portfolio.

This analysis results in an asset allocation to Public Risk Assets, Safe Assets and Private Risk Assets. Within each risk allocation, the Systems' investment portfolio includes long-term commitments to specific asset programs. The target risk-based asset allocation is illustrated in the pie chart below. The Board of Trustees recently increased the Private Risk Assets target by 5% and proportionately decreased the Public Risk Assets target. These changes are discussed further in the following Asset Allocation section.

Target Risk-Based Asset Allocation



Asset Allocation

The asset allocation decision is generally regarded as the most important decision in the investment management process since it is crucial to achieving the long-term objectives established by the Board. In that light, it is the Board's responsibility to determine the appropriate policy asset allocation based upon several criteria with input and guidance from internal staff and Verus. These criteria are as follows:

1. The expected rate of return for each asset classification;
2. The expected risk of each asset classification (expressed as the standard deviation of the rate of return);
3. The correlation of returns between asset types;
4. The investment objectives and risk constraints of the Systems (including, but not limited to, liquidity needs and the expected time horizon);
5. The funded ratio and cash flow requirements for PSRS and PEERS; and
6. The impact of the Systems' return volatility on the contribution rate.

The Board of Trustees amended the long-term target asset allocation at the June 2016 Board of Trustees meeting. The allocation to each investment program considers both the risk tolerance of the Systems and the long-term return objective. The new long-term target asset allocation is expected to maintain similar levels of total portfolio risk while allowing for more efficient investment returns. However, given the nature of investing in Private Risk assets, it is expected to take several years to implement. Implementation will be achieved over a number of years through a disciplined investment approach. The policy benchmarks will change over time as the Systems make meaningful progress to the new long-term targets. The changes to the asset allocation are as follows: Public Risk Assets decreased 5% and Private Risk Assets increased 5%. Within Public Risk Assets, Public Credit decreased from 12% to 7%. Within Private Risk Assets, Private Equity increased from 10.5% to 12%, Real Estate increased from 7.5% to 9% and Private Credit increased from 2% to 4%.

The following chart details the long-term target and interim target asset allocations for fiscal year 2018. The interim policy allocations have been established to reflect the continued funding of Private Risk Assets and progress towards the Systems' long-term asset allocation objective. For performance measurement purposes, the interim policy will serve as the basis for establishing the Total Fund policy benchmark until the on-going process of funding Private Risk investments is meaningfully complete.

Target Asset Allocation and Policy Ranges				
	Fiscal Year 2018 Interim		**As Amended in 2016**	
Investment Type	**Long-Term Target**	**Policy Ranges**	**Long-Term Target**	**Policy Ranges**
Public Risk Asset Programs				
U.S. Public Equity	27.00%	16% - 48%	27.00%	16% - 48%
Public Credit	12.00%	0% - 20%	7.00%	0% - 20%
Hedged Assets	6.00%	0% - 25%	6.00%	0% - 25%
Non-U.S. Public Equity	15.00%	8% - 28%	15.00%	8% - 28%
Total Public Risk Assets	**60.00%**	**35% - 75%**	**55.00%**	**35% - 75%**
Safe Assets Programs				
U.S. Treasuries	16.00%	0% - 40%	16.00%	0% - 40%
U.S. TIPS	4.00%	0% - 40%	4.00%	0% - 40%
Cash & Cash Equivalents	0.00%	0% - 10%	0.00%	0% - 10%
Total Safe Assets	**20.00%**	**10% - 40%**	**20.00%**	**10% - 40%**
Private Risk Asset Programs				
Private Equity	10.50%	4% - 14%	12.00%	4% - 15%
Private Real Estate	7.50%	4% - 10%	9.00%	4% - 12%
Private Credit	2.00%	0% - 7%	4.00%	0% - 8%
Total Private Risk Assets	**20.00%**	**5% - 25%**	**25.00%**	**10% - 30%**
Total Fund	**100.0%**		**100.0%**	

The Board recognizes the cyclical nature of the investment markets and it has allowed the internal staff to capitalize upon opportunities by changing the allocation of each asset class or sub-asset class within broad strategic bands or policy ranges (as indicated in the previous table). The flexibility given to the internal staff in establishing the strategic mix provides opportunities for the Systems to take advantage of changing market conditions. To ensure appropriate controls, the Director, CIO and Verus must unanimously agree upon all material strategic changes prior to implementation.

Performance Objectives and Monitoring Process

Generating a total nominal rate of return net of expenses of at least 7.6% and a real rate of return net of expenses of at least 5.35% per annum is an important consideration in the asset allocation decision and the primary performance objective for the Systems over long periods of time. The need for a long-term focus is necessary to preclude the temptation to overreact to events in the financial markets that have no relevance to long-term asset/liability management of the Systems. The resulting dilemma is the conflicting requirement to evaluate investment policy implementation over shorter time periods while maintaining a long-term focus on meeting the return objectives. In order to determine if the Systems' short-term and long-term objectives are being achieved, the Board evaluates performance relative to policy and strategic benchmarks. The policy benchmarks allow the Systems to be judged by performance relative to a defined set of broad market indices (i.e., the Systems' long-term asset allocation objective). The strategic benchmarks allow the Board to consider the additional value generated from the latitude given to the internal staff to alter the asset class or sub-asset class allocations.

Policy Decisions

The value added through policy decisions is measured by the difference between the policy benchmark return and the actuarial required rate of return objective (defined as Real Return Objective + Inflation). A policy benchmark return greater than the actuarial required rate of return reflects value added. A policy benchmark return less than the actuarial required rate of return reflects losses or shortfalls in performance in funding the liabilities of the Systems. These policy decisions are measured over long periods of time.

Strategy Decisions

Strategy decisions are asset class or sub-asset class asset allocation choices made by the internal staff to deviate from the policy benchmark weights, with approval from Verus and the Director that the proposed material deviation is in compliance with the Board's investment policy. The value added through these decisions to overweight and/or underweight these sub-asset classes is measured by the difference between the strategic benchmark return and the policy benchmark return. This difference captures the value added by internal staff through asset class or sub-asset class strategic decisions relative to the Board's broad policy allocation decisions. A strategic benchmark return greater than the policy benchmark return reflects value added through the allocation decisions. A strategic benchmark return less than the policy benchmark return reflects losses to the fund's performance based upon strategy decisions.

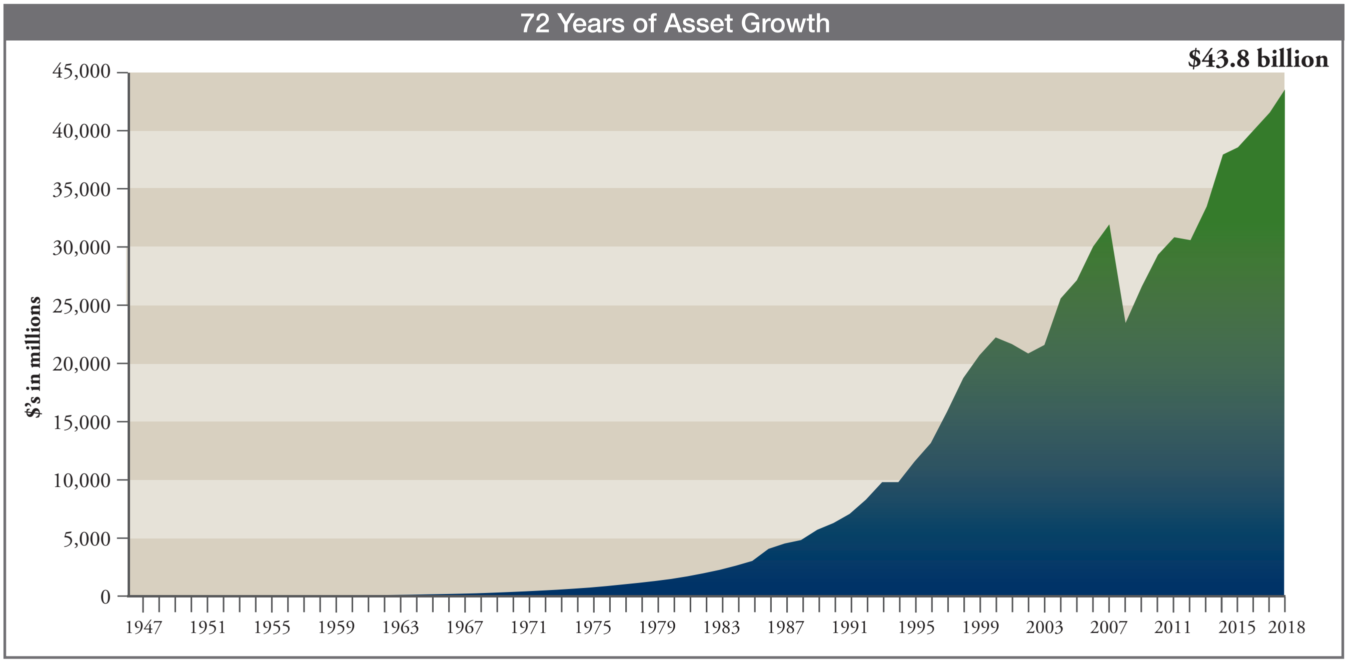
Implementation Decisions

Implementation decisions are manager selection choices made by the internal staff with the approval of a consultant(s) and the Director. The value added through these manager selection decisions is measured by the difference between the actual portfolio return and the strategic benchmark return. An actual portfolio return greater than the strategic benchmark return reflects value added through these manager selection decisions. An actual portfolio return less than the strategic benchmark return reflects losses to the fund's performance based upon implementation decisions.

Risk Controls

The Board recognizes that even though the Systems' investments are subject to short-term volatility, it is critical that a long-term investment focus be maintained. Given the importance of the broad asset allocation decision to the Systems' long-term investment success, internal staff is required to conduct an asset allocation/ liability study at least every five years to examine the appropriate long-term investment strategies for the Systems. The most recent asset/liability study was conducted in fiscal year 2016 and the next study is scheduled for 2021. In addition, the CIO must annually evaluate the asset allocation mix and any strategic allocation of the portfolio and provide a report to the Board on the results of that evaluation. This ongoing review of the asset allocation process helps to ensure the asset allocation is being monitored and modified as needed to meet the financial obligations of the Systems.

Total Fund Review



The Systems' total invested assets were $43.8 billion as of June 30, 2018. There has been a long-term growth in assets since the inception of PSRS in 1946 and PEERS in 1965, as shown in the graph above.

Investment Performance[3]

The Systems achieved strong absolute and relative returns in fiscal year 2018. The Systems' well-structured investment portfolio added approximately $3.6 billion in investment earnings to the growth of assets during the fiscal year 2018. The Systems earned an investment return of 8.9% for fiscal year 2018 (8.7% net of all investment expenses and fees) with an ending market value of invested assets at $43.8 billion. The total plan return, net of all investment expenses and fees, exceeded both the long-term investment goal (actuarial required rate of return) of 7.6% and the total plan policy benchmark return of 7.4%. PSRS and PEERS are long-term investors with a diversified portfolio that continues to produce strong long-term returns where the annualized investment return is 8.5% (8.4% net of all investment expenses and fees) over the last 30 years.

As illustrated in the table below, within the Systems' investment portfolio, U.S. equities delivered a return of 14.1%, non-U.S. equities returned 8.3%, private equity (investments in private companies) increased 19.4%, real estate produced 9.2% returns, and hedged assets returned 6.3%. Each of these asset classes strongly contributed to the total returns of the Systems while providing diversification from fixed income securities.

Total Fund Performance

Assets	Total Return	Weighted Contribution*
U.S. Public Equity	14.1%	4.1%
Public Credit	0.6%	0.0%
Hedged Assets	6.3%	0.8%
Non-U.S. Public Equity	8.3%	1.4%
Public Risk Assets	**9.7%**	**6.1%**
U.S. Treasuries	-0.6%	-0.1%
U.S. TIPS	1.6%	0.1%
Cash & Cash Equivalents	1.0%	0.0%
Safe Assets	**-0.1%**	**0.0%**
Private Equity	19.4%	1.9%
Private Real Estate	9.2%	0.7%
Private Credit	12.5%	0.1%
Private Risk Assets	**14.6%**	**2.6%**
TOTAL RETURN	**8.9%**	**8.9%**

**Percentages have been adjusted to reflect compounding effects and changes in asset weights.*

[3] *Investment returns were prepared using a time-weighted rate of return based on market values.*

Investment Performance Relative to Benchmarks*

	Fiscal Year	3-Year	5-Year	10-Year**
Public Risk Assets Program				
U.S. Public Equity	**14.1%**	**10.7%**	**13.0%**	**10.4%**
Russell 3000 Index	14.8%	11.6%	13.3%	10.2%
Public Credit	**0.6%**	**2.9%**	**2.8%**	**n/a**
Bloomberg Barclays U.S. Intermediate Credit Index	-0.4%	2.0%	2.5%	n/a
Hedged Assets	**6.3%**	**4.8%**	**6.6%**	**6.1%**
Hedged Assets Benchmark	5.3%	5.3%	6.2%	5.7%
Benchmark consists of:				
50.0% Bloomberg Barclays U.S. Intermediate Credit Index				
25.0% MSCI ACWI ex-USA net Index				
25.0% Russell 3000 Index				
Non-U.S. Public Equity	**8.3%**	**7.2%**	**8.3%**	**3.9%**
MSCI ACWI ex-USA net Index	7.3%	5.1%	6.0%	2.8%
Total Public Risk Assets	**9.7%**	**7.9%**	**9.4%**	**6.6%**
Public Risk Assets Benchmark	8.9%	7.5%	8.6%	5.4%
Benchmark consists of:				
47.5% Russell 3000 Index				
27.5% MSCI ACWI ex-USA net Index				
25.0% Bloomberg Barclays U.S. Intermediate Credit Index				
Safe Assets Program				
Total Safe Assets	**-0.1%**	**1.0%**	**1.2%**	**2.9%**
Safe Assets Benchmark	-0.2%	1.1%	1.4%	2.8%
Benchmark consists of:				
80.0% Bloomberg Barclays U.S. Treasury Index				
20.0% Bloomberg Barclays U.S. TIPS 1-10 Years Index				
Private Risk Assets Program				
Private Equity	**19.4%**	**15.9%**	**16.4%**	**11.7%**
Russell 3000 Index	14.8%	11.6%	13.3%	10.2%
Private Real Estate	**9.2%**	**9.6%**	**11.3%**	**4.2%**
NFI-ODCE Index	7.5%	8.2%	9.7%	4.6%
Private Credit	**12.5%**	**8.6%**	**8.0%**	**8.4%**
ICE BofAML U.S. High Yield Master II Index	2.5%	5.6%	5.5%	8.0%
Total Private Risk Assets	**14.6%**	**12.7%**	**13.6%**	**8.0%**
Private Risk Assets Benchmark	10.8%	9.8%	11.3%	8.8%
Benchmark consists of:				
52.5% Russell 3000 Index				
37.5% NFI-ODCE Index				
10.0% ICE BofAML U.S. High Yield Master II Index				
TOTAL FUND				
Total Fund	**8.9%**	**7.7%**	**8.8%**	**6.9%**
Total Fund Benchmark	7.4%	6.7%	7.7%	6.2%
Benchmark consists of:				
39.0% Russell 3000 Index				
16.5% MSCI ACWI ex-USA net Index				
16.0% Bloomberg Barclays U.S. Treasury Index				
15.0% Bloomberg Barclays U.S. Intermediate Credit Index				
7.5% NFI-ODCE Index				
4.0% Bloomberg Barclays U.S. TIPS 1-10 Years Index				
2.0% ICE BofAML U.S. High Yield Master II Index				
Actuarial Required Rate of Return * **	**7.6%**	**7.8%**	**7.9%**	**7.9%**
TUCS Universe Median	**8.6%**	**7.4%**	**8.4%**	**6.9%**

**Investment returns were prepared using a time-weighted rate of return based on market values.*

***Some programs have been established more recently and therefore 10-year returns are not available.*

****The Board of Trustees revised the long-term investment return objective from 7.75% to 7.6% effective for fiscal year 2018 investment performance. The extended time periods reflect the blended returns of the historical actuarial required rates of return.*

Investment Performance Relative to Benchmarks

The Board has established a long-term objective (actuarial required rate of return) to achieve a total investment return of at least 7.6% per year and a real rate of return of at least 5.35% per year. As discussed in the Investment Objective section, the long-term objective was revised to 7.6% effective for fiscal year 2018 and 7.5% effective for fiscal year 2019. The fiscal year 2018 total plan return of 8.9% exceeded the long-term objective. Over long periods of time, PSRS and PEERS continue to produce investment returns that meet or exceed the Systems' objective. The annualized investment return for the Systems is 8.5% over the last 30 years. The reductions in the long-term objective are based on capital market expectations and the belief that expected investment returns going forward will be lower than historical returns.

As previously discussed, in order to determine if the Systems' short-term and long-term objectives are being achieved, the Board utilizes three benchmarks by which the Systems' progress may be judged: (1) performance relative to a **policy benchmark** (defined set of broad market indices that reflects the Systems' long-term asset allocation, or market beta), (2) performance relative to a **strategic benchmark** which indicates value added by the internal staff, and, to a lesser extent, (3) performance relative to other public pension systems and their investment managers as a reference point of oversight.

The internal staff presents to the Board a detailed attribution of the total fund performance at the end of each fiscal year. Value is added over and above expected market returns if the strategic benchmark exceeds the policy benchmark (i.e., the internal staff made positive strategic decisions) and/or if the actual total fund return exceeds the strategic benchmark. The Statistical Performance section on the following page shows that for all reported time periods the total fund return exceeded the strategic benchmark and the strategic benchmark exceeded the policy benchmark demonstrating added value by Internal Staff through strategic asset allocation decisions and implementation decisions.

The fiscal year 2018 return was 8.9% which exceeded the policy benchmark by 150 basis points. The fiscal year investment return, net of ***all*** fees and expenses, was 8.7% which was also significantly above the policy benchmark. The total fund return has exceeded the policy benchmark in seven of the last ten fiscal years, an indication that internal staff and active investment management have added value to the Systems. Over the past five years, the total fund return has exceeded the policy benchmark by 110 basis points, on an annualized basis, resulting in over $1.8 billion in excess performance (net of all investment expenses and fees) to the Systems.

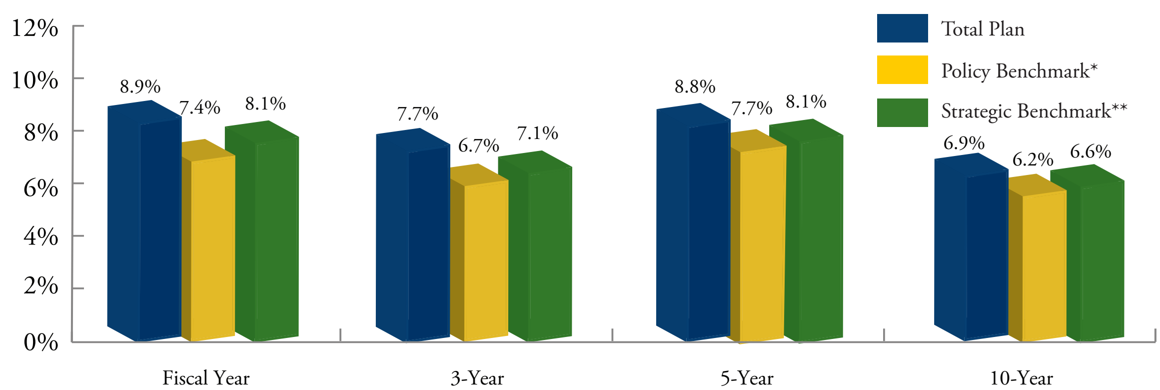
The Systems' utilize the Trust Universe Comparison Services (TUCS) to compare the total return and risk levels of the Systems relative to other public pension funds with assets in excess of $1 billion. As the chart on page 68 indicates, the total fund return for the one-year, three-year and five-year time periods exceeded the median return of other large public funds while the ten-year return was equal to the public fund median return. The systems have taken substantially less risk than comparable funds during all time periods yet have consistently provided higher investment returns.

Statistical Performance

One of the primary investment objectives of the Systems is to achieve returns similar to the market but at lower risk or volatility levels. To that end, internal staff monitors a number of quantitative risk statistics related to the total investment portfolio as well as individual composites. The following table indicates that the Systems have taken less risk than the policy benchmark (as measured by standard deviation) over all time periods while achieving higher returns, thereby indicating strong risk-adjusted performance.

Beta measures the volatility, or systematic risk, of a security or portfolio in comparison to the market as a whole. If a portfolio has a beta of 1.0, it indicates that the portfolio moves in unison with the market. The Systems' portfolios have a beta of less than 1.0 relative to the policy benchmark, indicating less market volatility. The Systems' beta relative to the all country world stock index (MSCI ACWI net Index) is approximately 0.50. This signifies that the Systems' portfolio moves up or down approximately half as much as the world stock index.

Total Plan Performance



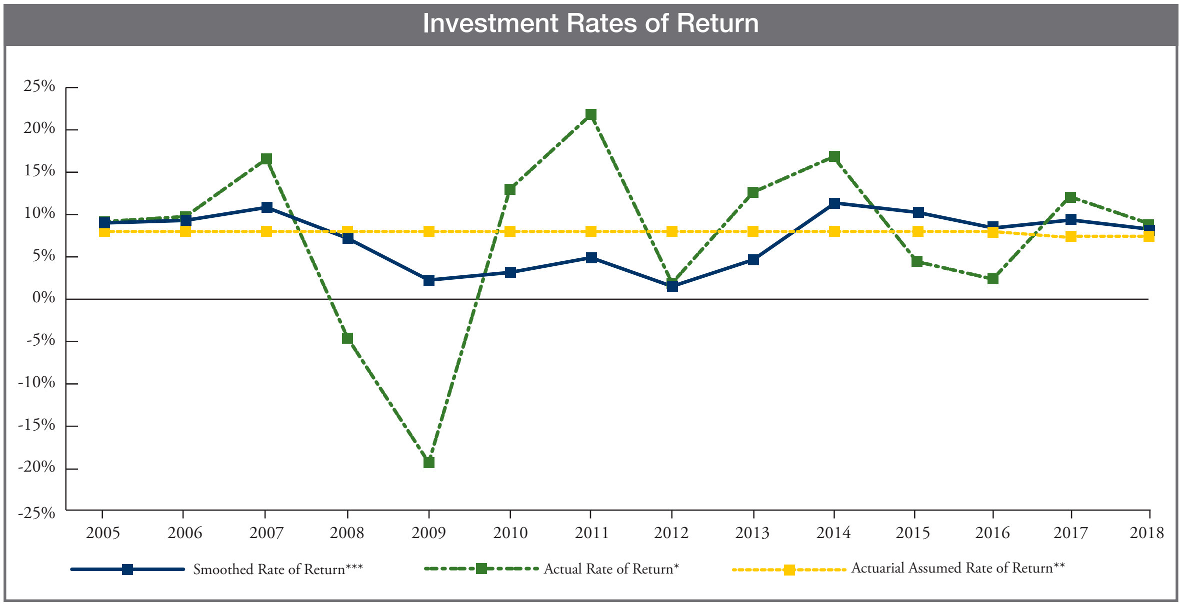
Total Plan Statistical Performance

Portfolio Characteristics	Fiscal Year	3-Year	5-Year	10-Year
Annualized Total Plan Return	8.9%	7.7%	8.8%	6.9%
Annualized Policy Benchmark Return*	7.4%	6.7%	7.7%	6.2%
Annualized Strategic Benchmark Return**	8.1%	7.1%	8.1%	6.6%
Excess Return	1.5%	1.0%	1.1%	0.7%
Annualized Standard Deviation of Composite	3.9%	4.9%	4.9%	8.4%
Annualized Standard Deviation of Policy Benchmark*	4.4%	5.8%	5.6%	9.7%
Beta to Policy Benchmark*	0.87	0.83	0.86	0.86
Beta to MSCI ACWI net Index	0.44	0.45	0.46	0.50

**As of June 30, 2018: 39.0% Russell 3000 Index, 16.5% MSCI ACWI ex-USA net Index, 16% Bloomberg Barclays U.S. Treasury Index, 15% Bloomberg Barclays U.S. Intermediate Credit Index, 7.5% NFI-ODCE, 4% Bloomberg Barclays U.S. TIPS 1-10 Years Index, and 2% ICE BofAML U.S. High Yield Master II Index.*

***As of June 30, 2018: 41.7% Russell 3000 Index, 20.3% MSCI ACWI ex-USA net Index, 12.2% Bloomberg Barclays U.S. Treasury Index, 11.3% Bloomberg Barclays U.S. Intermediate Credit Index, 7.4% NFI-ODCE, 3.2% Merrill Lynch 3- Month U.S. Treasury Bill Index, 3.1% Bloomberg Barclays U.S. TIPS 1-10 Years Index, and 0.8% ICE BofAML U.S. High Yield Master II Index. The Total Plan Strategic Benchmark changes monthly based on the actual asset allocation at the end of the previous month.*

The following chart shows the relationship between market value returns, the actuarially assumed rate of return and the utilization of an actuarial asset valuation method of smoothed assets. To reduce volatility in employer and employee contribution rates, a common actuarial practice of "asset smoothing" is utilized. The application of this practice results in full recognition of returns at the actuarial assumed rate and recognizes any annual excess or deficiency relative to the assumed rate over a period of five years.



**The Actual Rate of Return (market return) consists of all investment gains and losses (net of investment expenses) on the fair market value of assets each year.*

***The Actuarial Assumed Rate of Return is the assumed rate of return on the actuarial value of assets and is used in establishing contribution rates and pension obligations, including the net pension liability.*

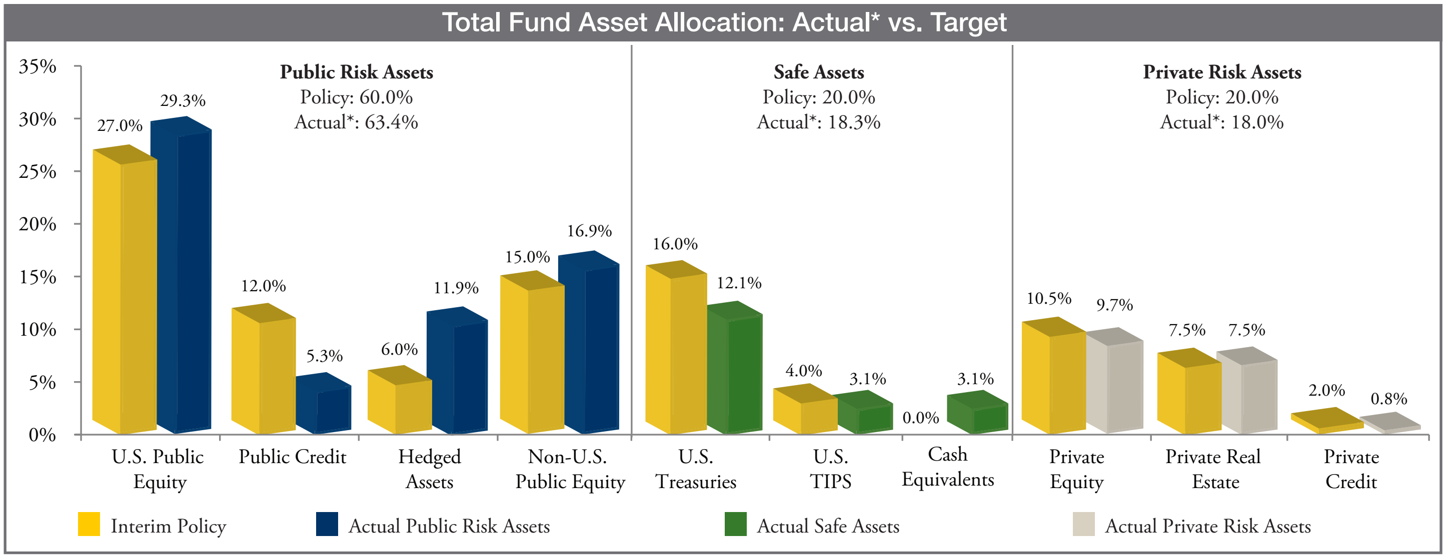
****Investment earnings in excess or deficient of the assumed rate of return are smoothed over a 5-year period for actuarial funding purposes. Twenty percent of the excess or deficiency is recognized annually for a 5-year period. This calculation results in the Smoothed Rate of Return.*

Asset Allocation: Actual Versus Target

The interim policy allocations have been established to reflect meaningful progress towards the new long-term targets and for policy benchmark weights, as discussed in the Investment Policy Summary: Asset Allocation section. Until meaningful progress is made, the interim target will reflect the prior long-term policy allocations.

For fiscal year 2018 the interim policy allocation was 60% Public Risk Assets, 20% Safe Assets and 20% Private Risk Assets. Within each broad policy target, the Board has established sub-asset class targets. For example, as the chart below indicates, the target allocation to U.S. Public Equity was 27% as of June 30, 2018.

As illustrated in the chart, internal staff utilized the flexibility built into the investment policy to strategically overweight or underweight certain asset classes throughout the year. Strategic decisions within the Public Risk Assets program included an overweight to U.S. equities and Non-U.S. equities which provided meaningful returns to the Systems in fiscal year 2018.



**Total Plan assets include 0.3% invested in an operating cash account that is not reflected in the chart above.*

Public Risk Assets Summary

As of June 30, 2018, Public Risk assets had a fair value of approximately $27.8 billion, representing 63.4% of total plan assets.

Investment Program Description

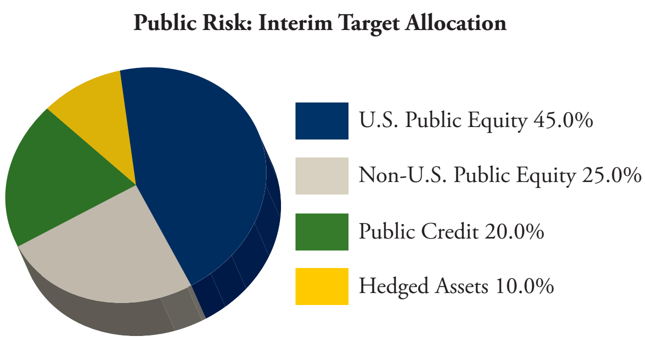
The Board of Trustees has adopted an asset allocation policy that includes a significant allocation to Public Risk Assets. The four programs within the Public Risk Asset composite are U.S. Public Equity, Public Credit, Hedged Assets and Non-U.S. Public Equity. Each program within the Public Risk allocation is a separate multi-manager composite that is treated generally as a single portfolio. Each program serves a specific and distinct role within the overall Public Risk composite and also within the overall total plan allocation. Over time, the Public Risk composite and its sub-components serve as an effective and efficient vehicle to supply the underlying beta exposure to a portfolio of global risk assets required by the Systems' asset allocation policy, while providing the opportunity to achieve excess returns above that of a passive benchmark through the prudent combination of passive investment vehicles and a wide range of active investment strategies.

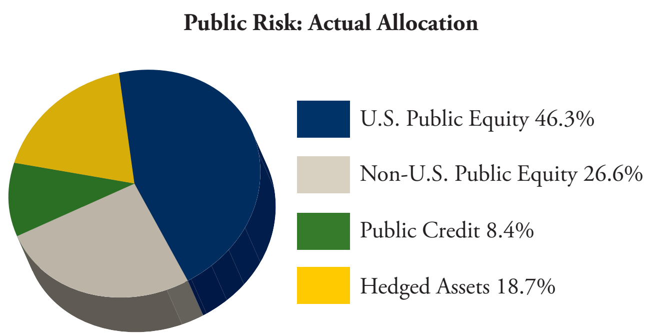
Structure

As of June 30, 2018, 46.3% of the Systems' Public Risk assets were invested in the U.S. Public Equity program, 26.6% in the Non-U.S. Public Equity program, 8.4% in the Public Credit program and 18.7% in the Hedged Assets program. Each of these programs is discussed in more detail on the following pages.

The internal staff continued to overweight the total plan to Public Risk assets during the year. The interim target allocation for Public Risk assets during fiscal year 2018 was 60.0% and the Systems' allocation at the end of the fiscal year was 63.4%, down from the prior year overweight of 65.9%. Internal staff strategically rebalanced from Public Risk assets during fiscal year 2018.Within the Public Risk assets composite, internal staff continued to overweight U.S. Public Equity, Non-U.S. Public Equity, and Hedged Assets while increasing an underweight to Public Credit throughout the fiscal year.

Public Risk Assets Allocation





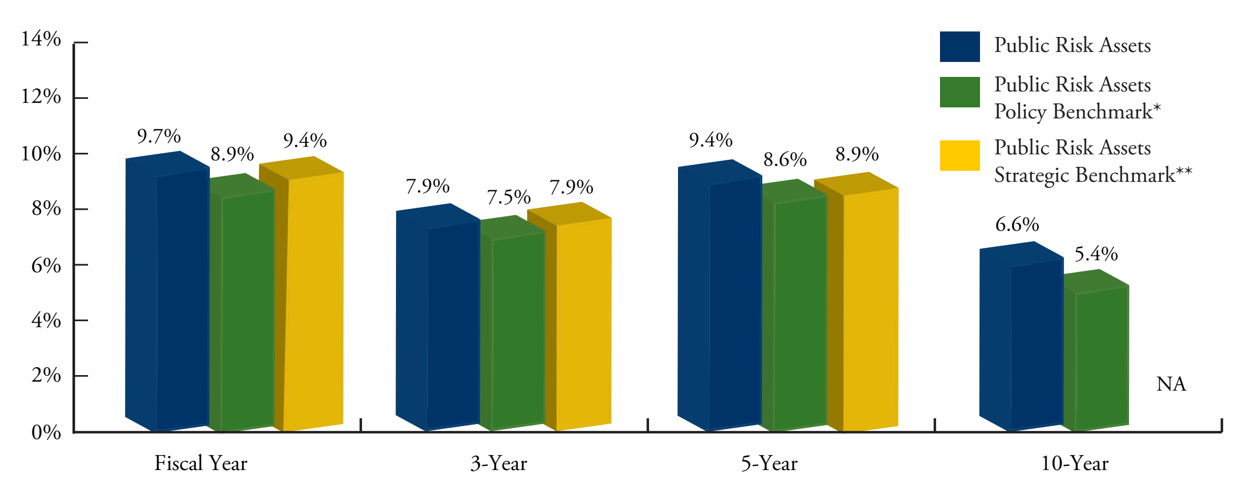
Market Overview

Global economic growth remained robust throughout fiscal year 2018, including improved labor markets and strong corporate earnings resulting in positive equity market returns. The Russell 3000 Index (broad measure of the U.S. stock market) was up 14.8% for the year and the MSCI ACWI ex-USA net Index (broad measure of the international stock markets) increased 7.3%. Both the Russell 3000 Index and the MSCI ACWI ex-USA net Index hit record highs in January 2018 before pulling back slightly into the fiscal year-end. Bond markets were down marginally due to rising interest rates, resulting in a -0.4% return for the Public Credit benchmark (Bloomberg Barclays U.S. Intermediate Credit Index).

Performance

The total return for the Systems' Public Risk portfolio was 9.7%, which outperformed the policy benchmark by 80 basis points. As shown in the table and graph below, the Systems' Public Risk composite returns significantly outperformed the benchmark in all reported time periods. The positive performance of the portfolio relative to the policy benchmark indicates substantial value added by the internal staff through both strategic asset allocation decisions and manager selection decisions.

Public Risk Assets Performance



Public Risk Assets Statistical Performance

Portfolio Characteristics	Fiscal Year	3-Year	5-Year	10-Year
Annualized Return	9.7%	7.9%	9.4%	6.6%
Annualized Policy Benchmark Return*	8.9%	7.5%	8.6%	5.4%
Annualized Strategic Benchmark Return**	9.4%	7.9%	8.9%	N/A
Excess Return	0.8%	0.4%	0.8%	1.2%
Annualized Standard Deviation of Composite	6.1%	7.6%	7.4%	12.9%
Annualized Standard Deviation of Policy Benchmark*	6.2%	8.0%	7.7%	13.5%
Beta to Policy Benchmark*	0.98	0.95	0.96	0.95
Beta to MSCI ACWI net Index	0.70	0.70	0.71	0.78

**The Public Risk Assets Policy Benchmark is composed as follows: 47.5% Russell 3000 Index, 27.5% MSCI ACWI ex-USA net Index, 25.0% Bloomberg Barclays U.S. Intermediate Credit Index.*

*** The Public Risk Assets Strategic Benchmark changes monthly based on the actual asset allocation at the end of the previous month. It was established more recently so a ten-year return is not available.*

The table indicates that the Systems have taken less risk relative to the policy benchmark (as measured by standard deviation) while achieving higher returns over the longer-term time periods, thereby indicating strong risk-adjusted performance. Additionally, the Systems' portfolios have a beta of less than 1.0 relative to the policy benchmark, indicating less market risk.

U.S. Public Equity Program Summary

As of June 30, 2018, the U.S. Public Equity assets had a fair value of approximately $12.8 billion, representing 29.3% of total plan assets.

Investment Program Description

U.S. Public Equity is comprised of the Large-Cap, Small-Cap and Alpha Overlay programs which seek to provide long-term capital appreciation and dividend income in excess of inflation through the investment in domestic equity securities. Returns above a purely passive investment benchmark are targeted through the use of a wide variety of active investment strategies that may employ exposure to both equity securities and other types of investments. The primary ***beta*** exposure is achieved through investments in passive investment vehicles (including derivatives), traditional long-only active domestic equity management, and active long/short approaches. ***Alpha*** (or, excess returns above a passive alternative) is expected to be achieved through traditional long-only active domestic equity management, active long/short approaches and alpha overlay strategies (described in greater detail at the end of this section).

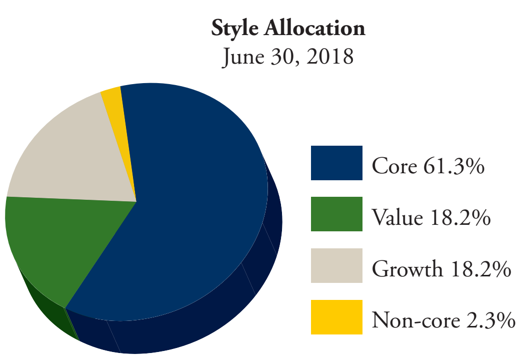
Structure

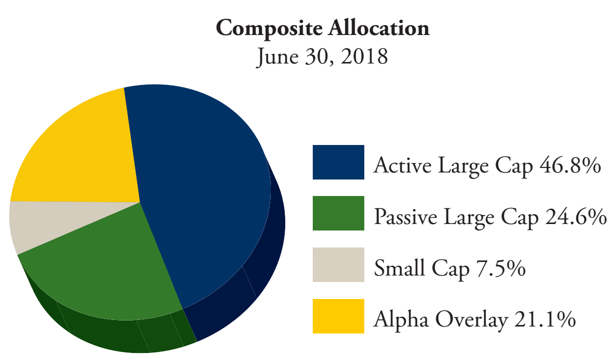
As of June 30, 2018, 24.6% of the U.S. Public Equity composite was passively managed. The remainder of the portfolio was actively managed and diversified across a broad array of capitalization ranges and investment styles, including the Small-Cap and the Alpha Overlay program. Both programs represent multi-manager pools of assets managed within the overall U.S. Public Equity structure. The Small-Cap program encompasses small capitalization assets. The Alpha Overlay composite focuses on the separation of returns into alpha and beta, and encompasses alternative equity mandates including hedge fund portfolios.

Exposure to the various segments of the domestic equity market (i.e., growth-oriented, value-oriented, and core) and to the approved investment strategy types are achieved through the identification, selection and on-going management of SEC-registered investment advisors qualified to serve as fiduciaries to the Systems.

The pie charts below depict the U.S. Public Equity portfolio by presenting the current style structure of the portfolio as well as the allocation by composite and market sector.

U.S. Public Equity Allocations: Style and Composite





Market Overview

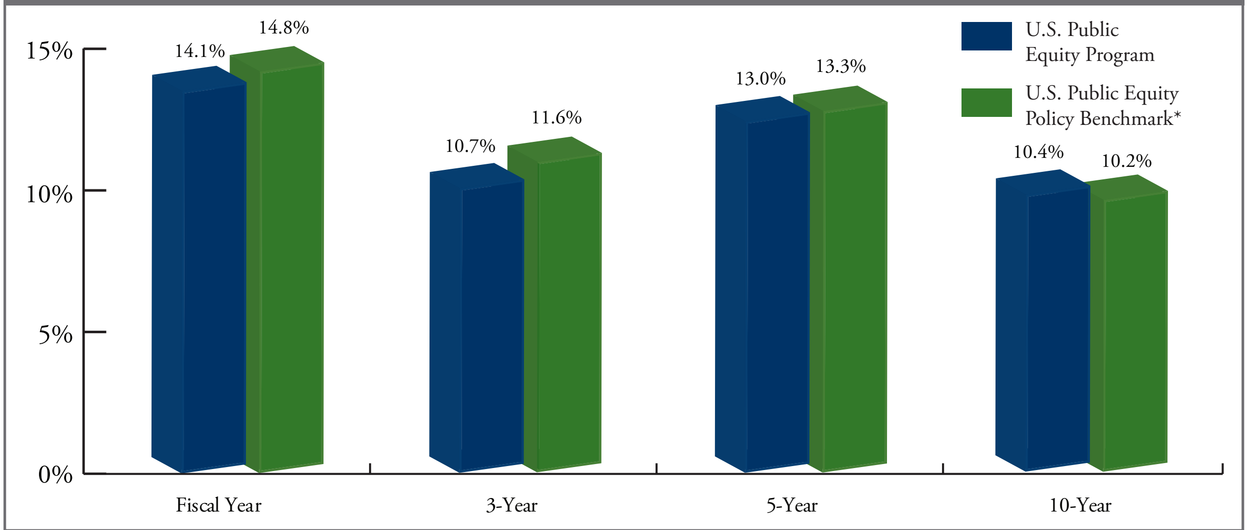
The U.S. equity markets continued to perform very well in fiscal year 2018 across all market capitalizations while growth styles performed especially well in comparison to value styles. The comprehensive measure of the U.S. stock market (Russell 3000 Index) increased 14.8% while small-cap stocks (Russell 2000 Index) increased 17.6% for the year. Large-cap growth stocks (Russell 1000 Growth Index) significantly outperformed large-cap value stocks (Russell 1000 Value Index) with a return of 22.5% compared to 6.8% while small-cap growth stocks (Russell 2000 Growth Index) significantly outperformed small cap value stocks (Russell 2000 Value Index) with a return of 21.9% compared to 13.1%.

Performance

The total return for the U.S. Public Equity program was 14.1% compared to the benchmark return of 14.8% for the fiscal year ended June 30, 2018. Within the U.S. Public Equity program, the Large-Cap program returned 13.6%, Alpha Overlay returned 14.5% and the Small-Cap program returned 16.9% for the year.

As indicated in the table and graph, the U.S. Public Equity portfolio has produced strong absolute returns for all reported time periods. Over longer periods of time, the Systems' U.S. Public Equity portfolio is designed to deliver approximately 50-100 basis points of excess return through a combination of active and passive investment strategies.

U.S. Public Equity Performance



U.S. Public Equity Statistical Performance

Portfolio Characteristics	Fiscal Year	3-Year	5-Year	10-Year
U.S. Public Equity Return	14.1%	10.7%	13.0%	10.4%
Annualized Policy Benchmark Return*	14.8%	11.6%	13.3%	10.2%
Excess Return	-0.7%	-0.9%	-0.3%	0.2%

**The U.S. Public Equity Policy Benchmark is the Russell 3000 Index.*

Statistics

The following table displays the statistical characteristics of the Systems' U.S. Public Equity program as of June 30, 2018 with comparisons shown to the portfolio's policy benchmark. In addition, the top ten U.S. stock holdings as of June 30, 2018 are shown in the table following the characteristics.

U.S. Public Equity Characteristics

Characteristics	June 30, 2018 Systems' U.S. Public Equity Program	June 30, 2018 Russell 3000 Index
Number of Securities	1,828	3,008
Dividend Yield	1.7%	1.8%
Price-to-Earnings Ratio	20.1	20.9
Avg Market Capitalization	$ 144.3 bil	$ 179.9 bil
Price-to-Book Ratio	3.5	3.2

** Includes only actively managed separate accounts.*

A complete list of portfolio holdings is available upon request.

U.S. Public Equity - Top 10 Holdings

Top 10 Largest Holdings* June 30, 2018	Fair Value	% of Total U.S. Public Equity
Amazon.com, Inc.	$ 141,792,217	1.1%
Facebook, Inc.	94,407,652	0.7%
Alphabet, Inc.	92,187,029	0.7%
Bank of America Corp.	84,116,761	0.7%
Exxon Mobile Corp.	75,747,919	0.6%
Microsoft Corp.	75,284,100	0.6%
Johnson & Johnson	72,582,676	0.6%
Netflix, Inc.	71,866,548	0.6%
Coca-Cola Co.	69,430,336	0.5%
JPMorgan Chase & Co.	63,063,195	0.5%
TOTAL	**$ 840,478,433**	**6.6%**

Investment Advisors

As of June 30, 2018, the Systems had contracts with 14 external investment advisors who managed 21 portfolios that comprised 78.9% of the U.S. Public Equity portfolio. The remaining 21.1% of the portfolio was in the Alpha Overlay program described in the next section. The Systems repositioned the Small-Cap program during the year by adding a new Enhanced Russell 2000 mandate with NISA Investment Advisors.

U.S. Public Equity Investment Advisors

Investment Advisor	Investment Style	Fair Value* As of June 30, 2018	% of Total Plan Fair Value
Analytic Investors	Structured Large Cap Value	$ 286,620,399	0.6%
Analytic Investors	U.S. Low Volatility Equity	1,306,571,345	3.0%
AQR Capital Management	Large Cap 140/40 Core	820,603,985	1.9%
Aronson + Johnson + Ortiz	Active Large Cap 130/30 Value	528,391,100	1.2%
Aronson + Johnson + Ortiz	Active Large Cap Value	478,940,607	1.1%
Blackrock	Passive Russell 1000 Index	2,981,246,119	6.8%
Blackrock	Passive Russell 1000 Growth Index	40,626,109	0.1%
Columbia Management	Active Large Cap Growth	270,540,948	0.6%
Lazard Asset Management	Active US Equity Concentrated	379,769,072	0.9%
Martingale Asset Management	Active Large Cap 130/30 Growth	520,956,203	1.2%
Westwood Management	Active Large Cap Value	451,606,098	1.0%
Westwood Management	Master Limited Partnerships	229,248,431	0.5%
Zevenbergen Capital	Active All Cap Growth	730,451,353	1.7%
Large-Cap Subtotal		**9,025,571,769**	**20.6%**
Allianz	Active Micro Cap Growth	135,108,019	0.3%
Allianz	Active Ultra Micro Cap Growth	45,495,532	0.1%
AQR Capital Management	Active Small Cap Value	182,576,827	0.4%
Blackrock	Passive Russell 2000 Index	138,544,193	0.3%
Chartwell Investment Partners	Active Small Cap Value	103,320,471	0.3%
Columbus Circle	Active Small Cap Growth	96,857,619	0.2%
NISA Investment Advisors	Enhanced Russell 2000 Index	221,049,419	0.5%
RBC Global Asset Management	Active Small Cap Core	180,769,540	0.4%
Small-Cap Subtotal		**1,103,721,620**	**2.5%**
Total		**$10,129,293,389**	**23.1%**

**Includes manager cash.*

Alpha Overlay Program Summary

As of June 30, 2018, the Alpha Overlay allocation had a fair value of approximately $2.7 billion, representing 6.2% of total plan assets.

Investment Program Description

The Alpha Overlay portfolio resides within the U.S. Large-Cap Equity program. The Alpha Overlay portfolio has been constructed to assist in meeting the long-term goals established for the overall U.S. Large-Cap Equity allocation. Specifically, Alpha Overlay provides broad exposure to large-cap U.S. stocks using S&P 500 total return swaps, while the returns of a select portfolio of hedge fund strategies provides the opportunity to earn excess returns above the passive S&P 500 Index. By combining the market exposure obtained through the S&P 500 total return swaps with the diversified exposures to investment strategies focused on alpha generation, the combined portfolio is constructed and managed to produce a return stream with volatility and beta characteristics similar to the passive S&P 500 Index, while generating excess returns (or alpha) of approximately 200-250 basis points over longer periods of time.

Structure

As of June 30, 2018, 20.8% of the Alpha Overlay composite assets were passively managed by NISA Investment Advisors using S&P 500 total return swaps to attain equitization. An additional 73.6% of the portfolio was actively managed across a diversified range of multi-strategy and market neutral hedge fund mandates. The remaining 5.6% of the portfolio was actively managed by Zevenbergen Capital in a long-only mandate. The chart below displays the specific investment advisor exposure within the composite as of June 30, 2018.

Alpha Overlay Investment Advisors

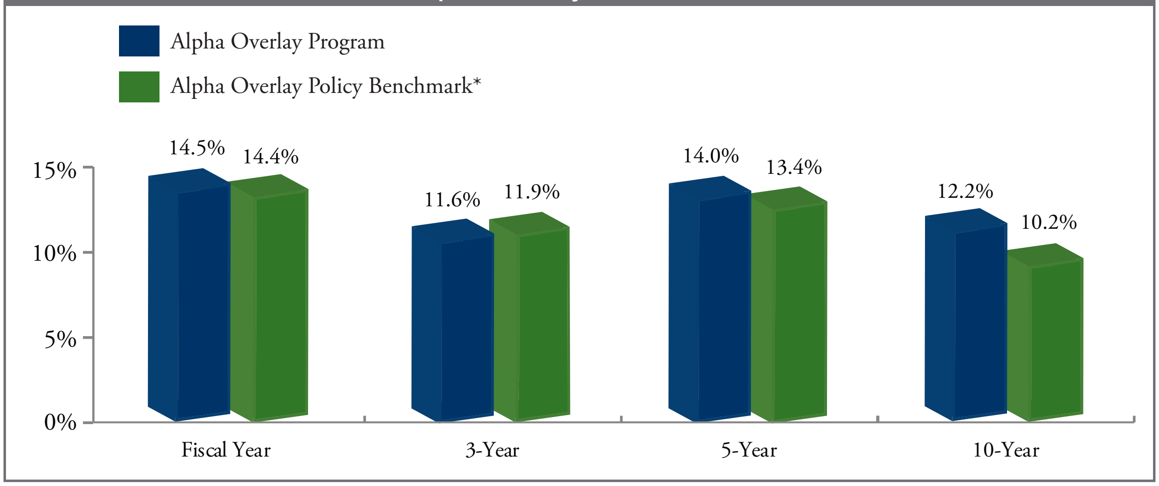
Investment Advisor	Investment Style	Fair Value* As of June 30, 2018	% of Total Plan Fair Value
Analytic Investors	Relative Value	$ 29,078,387	0.1%
AQR Absolute Return Fund	Relative Value	176,092,208	0.4%
Bridgewater Pure Alpha II	Asset Allocation/Global Macro	374,230,736	0.9%
Carlson Black Diamond	Relative Value	250,123,959	0.6%
Davidson Kempner Institutional Partners	Event Driven	267,125,406	0.6%
HBK Capital Management	Relative Value	185,067,980	0.4%
NISA Investment Advisors	S&P 500 Exposure	564,719,223	1.3%
Och-Ziff Domestic Partners	Multi-Strategy	149,893,809	0.3%
Pershing Square	Activist Equity	150,058,914	0.3%
Renaissance Institutional Equities Fund	Low Volatility Equity	322,712,836	0.7%
Stark Investments Limited Partners	Equity Long/Short	1,273,205	0.0%
UBS O'Connor Multi-Strategy Alpha	Relative Value	92,385,969	0.2%
Zevenbergen Capital	Active All-Cap Growth	152,977,921	0.4%
Total		**$2,715,740,553**	**6.2%**

** Includes manager cash.*

Performance

The fiscal year 2018 return for the Alpha Overlay program was 14.5% exceeding the benchmark return of 14.4% by 10 basis points. As shown in the table and graph below, the Alpha Overlay composite has produced significant long-term absolute and relative returns while maintaining a risk profile (standard deviation and beta) lower than the benchmark.

Alpha Overlay Performance



Alpha Overlay Statistical Performance

Portfolio Characteristics	Fiscal Year	3-Year	5-Year	10-Year
Annualized Alpha Overlay Return	14.5%	11.6%	14.0%	12.2%
Annualized Policy Benchmark Return*	14.4%	11.9%	13.4%	10.2%
Excess Return	0.1%	-0.3%	0.6%	2.0%
Annualized Standard Deviation of Composite	7.8%	8.9%	8.9%	14.3%
Annualized Standard Deviation of Policy Benchmark*	8.6%	10.2%	9.8%	14.7%
Beta to Benchmark*	0.88	0.85	0.88	0.96

**The Alpha Overlay Policy Benchmark is the S&P 500 Index.*

Non-U.S. Public Equity Program Summary

As of June 30, 2018, the Non-U.S. Public Equity assets had a fair value of approximately $7.4 billion, representing 16.9% of total plan assets.

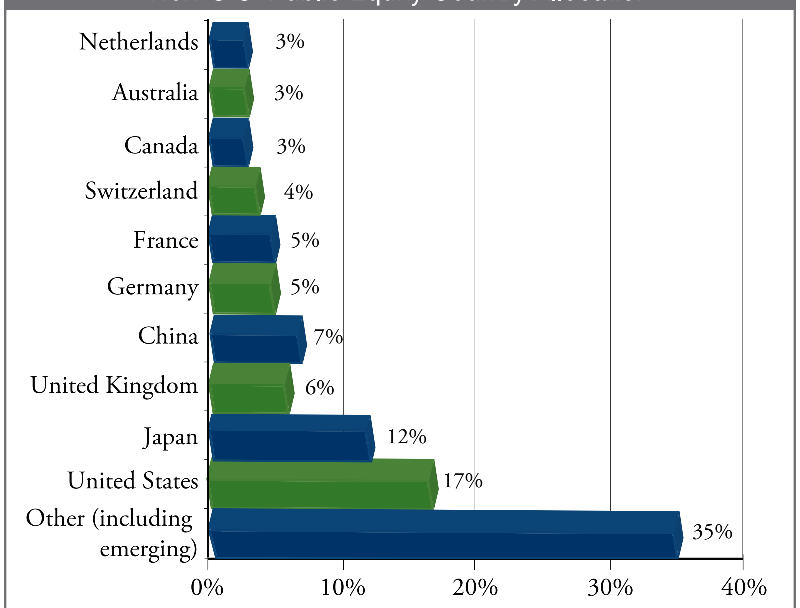
Investment Program Description

The Non-U.S. Public Equity program provides long-term capital appreciation and dividend income in excess of inflation through exposure to public equity securities on a global basis. Specific investment strategies approved for the Non-U.S. Public Equity program include passive investment vehicles, traditional long-only active equity management and active long/short approaches. Exposure to the various segments of the global equity market (i.e., U.S., developed non-U.S., emerging, growth-oriented, value-oriented, and core) and to the approved investment strategy types are achieved through the identification, selection and on-going management of SEC-registered investment advisors qualified to serve as fiduciaries to the Systems. The Non-U.S. Public Equity portfolios provide an element of diversification relative to the domestic equity portfolios. Currency is an aspect of international investing that can impact the performance and volatility of the asset class over the short-term. However, over the long-term, the effect from currency is expected to be neutral.

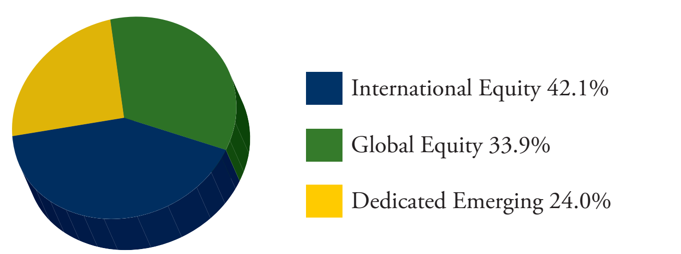
Structure

As of June 30, 2018, 6.3% of the Non-U.S. Public Equity composite was passively managed. The remainder of the portfolio was actively managed and diversified across capitalization ranges, styles and a number of developed and emerging market countries. The bar graph displays the specific country exposure within the composite while the pie chart indicates broader exposure by investment mandate.

Non-U.S. Public Equity Country Allocation



Non-U.S. Public Equity Allocation



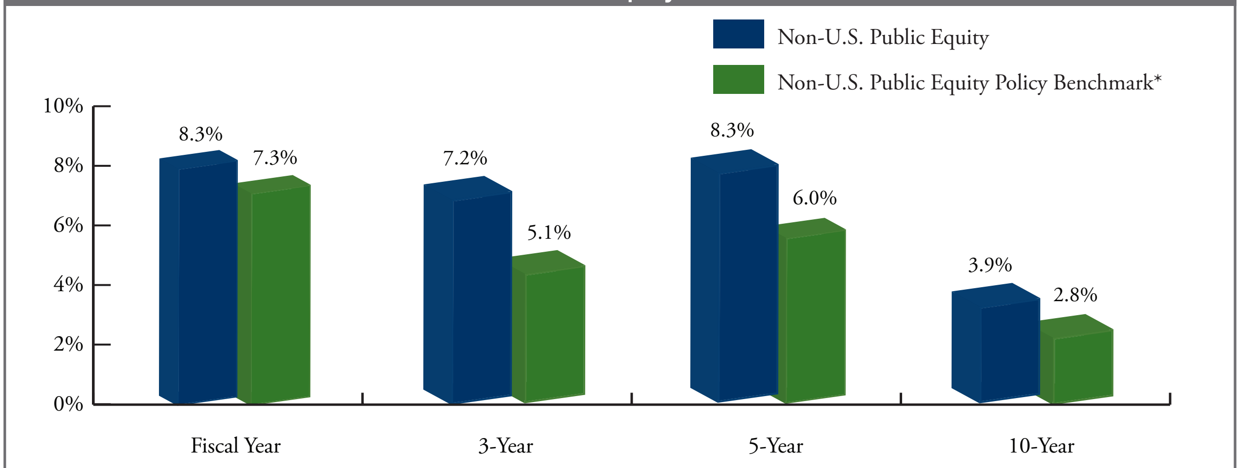
Market Overview

Global economies experienced significant GDP growth along with increasing commodity prices in fiscal year 2018 resulting in strong global equity market returns. The broad measure for developed international markets (MSCI EAFE net Index) increased 6.8%, emerging markets (MSCI EM net Index) increased 8.2% and global stocks (MSCI World net Index) increased 11.1%.

Performance

The total return for the Non-U.S. Public Equity program was 8.3% compared to the benchmark return of 7.3% for the fiscal year ended June 30, 2018. As shown in the table and graph below, the Systems' Non-U.S. Public Equity composite returns substantially outperformed the benchmark over all time periods. Over long periods of time, the Systems' Non-U.S. Public Equity program is designed to deliver approximately 100-150 basis points of excess returns through a combination of active and passive investment strategies. The ten-year excess returns are indicative of this expectation.

Non-U.S. Public Equity Performance



Non-U.S. Public Equity Statistical Performance

Portfolio Characteristics	Fiscal Year	3-Year	5-Year	10-Year
Annualized Non-U.S. Public Equity Return	8.3%	7.2%	8.3%	3.9%
Annualized Policy Benchmark Return*	7.3%	5.1%	6.0%	2.8%
Excess Return	1.0%	2.1%	2.3%	1.1%

**The Non-U.S. Public Equity Benchmark is the MSCI ACWI ex-USA net Index.*

Statistics

The following table displays the top ten global stock holdings as of June 30, 2018.

Non-U.S. Public Equity - Top 10 Holdings		
Top 10 Largest Holdings* June 30, 2018	**Fair Value**	**% of Total Non-U.S. Public Equity**
Nestle SA	$ 59,876,751	0.8%
Roche Holding AG	57,437,621	0.8%
AIA Group Ltd.	46,457,566	0.6%
SAP SE	44,638,007	0.6%
Hoya Corp.	42,275,778	0.6%
Samsung Electronics Ltd.	41,512,766	0.6%
Bayer AG	37,067,070	0.5%
Tata Consultancy Services Ltd.	36,488,957	0.5%
Taiwan Semiconductor Manufacturing	34,535,417	0.5%
Canadian National Railway Co.	34,294,228	0.4%
Total	**$ 434,584,160**	**5.9%**

** Includes only actively managed separate accounts.*

A complete list of portfolio holdings is available upon request.

Investment Advisors

As of June 30, 2018, the Systems had contracts with 12 external investment advisors who managed 15 portfolios within the Non-U.S. Public Equity portfolio. In fiscal year 2018, an Aronson + Johnson + Ortiz portfolio was terminated.

Non-U.S. Public Equity Investment Advisors			
Investment Advisor	**Investment Style**	**Fair Value* As of June 30, 2018**	**% of Total Plan Fair Value**
Acadian Asset Management	Active Emerging Markets	$ 514,576,453	1.2%
AllianceBernstein Institutional Mgmt.	Active Intl Value	474,097,290	1.1%
Analytic Investors	Active Global	790,282,867	1.8%
AQR Capital Management	Active Intl Core	784,879,536	1.8%
Arrowstreet Capital	Active Emerging Markets	247,172,024	0.6%
Arrowstreet Capital	Active Global	731,194,439	1.7%
Arrowstreet Capital	Global Long/Short	1,000,148,533	2.3%
Blackrock	Passive Intl Core	465,803,927	1.1%
Coronation Asset Management Limited	Active Emerging Markets	304,849,659	0.7%
Invesco	Active Intl Low Volatility	220,888,046	0.5%
MFS Investment Management	Active Intl Core	940,664,429	2.1%
MFS Investment Management	Active Intl Concentrated Core	239,402,632	0.5%
Neon Capital Management	Active Emerging Markets	123,068,578	0.3%
NISA Investment Advisors	Currency Hedge	(41,989,047)	-0.1%
Rock Creek Group	Active Emerging Markets	596,851,085	1.3%
Transition accounts	Transition accounts	1,496	0.0%
Total		**$ 7,391,891,947**	**16.9%**

** Includes manager cash.*

Public Credit Program Summary

As of June 30, 2018, the Public Credit assets had a fair value of approximately $2.3 billion, representing 5.3% of total plan assets.

Investment Program Description

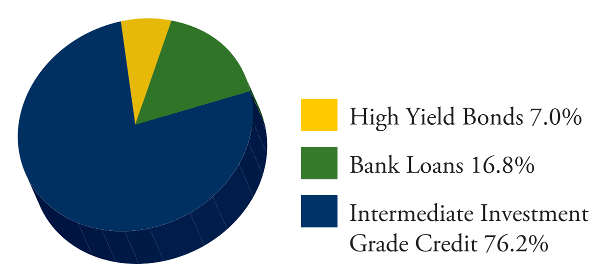
The Public Credit Program is designed to provide a source of income and capital appreciation for the Systems while creating substantial diversification to the total plan with a low correlation to other asset classes. Most securities in this program exhibit high liquidity. Specific investments can include investment grade corporate securities, below investment grade debt instruments, distressed debt securities, convertible bonds, bank loans, agencies, mortgage-backed securities, asset-backed securities, and interest rate sensitive securities (including those issued or guaranteed by the United States government or its agencies). Investments in this program may include debt of both U.S. and non-U.S. issuers.

The performance objective for the Public Credit program is to exceed the returns of the investment grade credit markets through the use of a wide variety of active management approaches while incurring a level of risk that is generally consistent with the policy benchmark.

Structure

As of June 30, 2018, the Public Credit composite was actively managed and diversified across high quality corporate bonds, bank loans and high yield bonds. The Systems' internal staff has built a diversified Public Credit portfolio with a base of high quality corporate bonds. The following pie chart presents the strategy allocation of the Systems' Public Credit assets as of June 30, 2018.

Public Credit Allocation



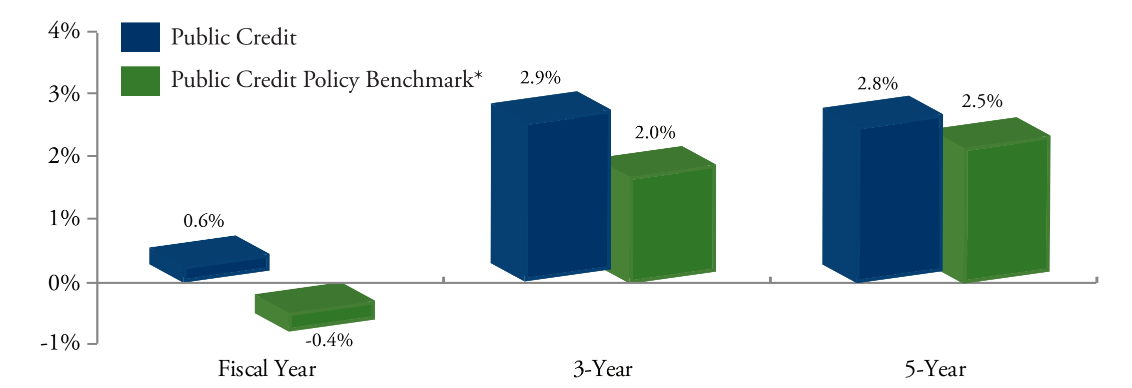
Market Overview

High yield bonds significantly outperformed treasuries and investment grade credit during the year as the yield on the 10-year Treasury increased to 2.9% on June 30, 2018 from 2.3% on June 30, 2017. Both investment grade credit corporate bonds (Bloomberg Barclays U.S. Intermediate Credit Index) and a broader measure of the U.S. bond market (Bloomberg Barclays U.S. Aggregate Index) decreased by 0.4% for the year. High yield, or lower quality bonds (ICE BofAML U.S. High Yield Master II Index), increased 2.5% for the year and global bonds (Bloomberg Barclays Global Agg. Ex-US Index) increased 2.8%.

Performance

The Public Credit program produced a modest absolute return for fiscal year 2018 and performed very well relative to the benchmark. The fiscal year return of 0.6% exceeded the benchmark return of -0.4% by 100 basis points. As indicated in the table and graph on page 83, the Public Credit portfolio has produced solid relative returns for all reported time periods. Over long periods of time, the Systems' Public Credit program is designed to deliver approximately 50-100 basis points of excess return through a combination of active and passive strategies.

Public Credit Performance



Public Credit Statistical Performance

Portfolio Characteristics	Fiscal Year	3-Year	5-Year
Annualized Public Credit Return	0.6%	2.9%	2.8%
Annualized Policy Benchmark Return*	-0.4%	2.0%	2.5%
Excess Return	1.0%	0.9%	0.3%

**The Public Credit Policy Benchmark is the Bloomberg Barclays U.S. Intermediate Credit Index.*
The Public Credit Program was established in December 2008, so ten-year returns are not available.

Statistics

The following table displays the top ten Public Credit holdings as of June 30, 2018.

Public Credit - Top 10 Holdings

Top 10 Largest Holdings* June 30, 2018	Fair Value	% of Total Public Credit
United States Treasury Note, 2.63%, 06/15/2021	$ 59,912,189	2.6%
AT&T, Inc., 0.00%, 11/27/2022	53,271,540	2.3%
Bank of America Corp., 2.37%, 07/21/2021	48,887,062	2.1%
Citigroup, Inc., 3.89%, 01/10/2028	48,267,191	2.1%
J.P. Morgan Chase & Co., 2.60%, 02/01/2021	47,227,989	2.0%
Morgan Stanley, 3.16%, 02/14/2020	45,136,350	1.9%
BAT Capital Corp, 3.22%, 08/15/2024	41,441,313	1.8%
Transcontinental Gas Pipe Line Co. LLC, 7.85%, 02/01/2026	40,055,829	1.7%
Shire Acquisitions Investments, 2.88%, 09/23/2023	39,330,144	1.7%
Alabama Power Co., 2.45%, 03/30/2022	38,556,453	1.6%
Total	**$ 462,086,060**	**19.8%**

** Includes only actively managed separate accounts.*
A complete list of portfolio holdings is available upon request.

Investment Advisors

As of June 30, 2018, the Systems had contracts with three external investment advisors who managed three portfolios in the Public Credit program.

Public Credit Investment Advisors

Investment Advisor	Investment Style	Fair Value* As of June 30, 2018	% of Total Plan Fair Value
NISA Investment Advisors	Corporate Credit	$ 1,782,946,205	4.1%
Oaktree Bank Loans	Senior Bank Loans	391,984,232	0.9%
Pacific Investment Management Co.	High Yield	163,959,873	0.3%
Total		**$ 2,338,890,310**	**5.3%**

**Includes manager cash.*

Hedged Assets Program Summary

As of June 30, 2018, the Hedged Assets portfolio had a fair value of approximately $5.2 billion, representing 11.9% of total plan assets.

Investment Program Description

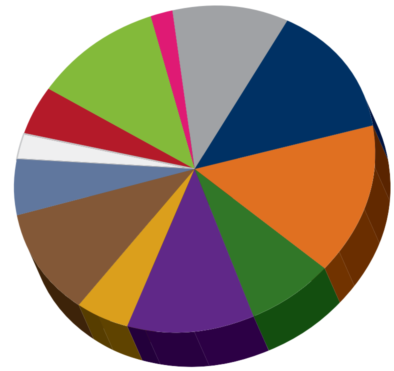
The Hedged Assets program's objective is to provide diversification to the total portfolio and reduce volatility within the Public Risk composite. The purpose of this program is to enhance the overall risk/return profile of the Public Risk composite through the inclusion of specialized investment strategies that typically generate returns in a different fashion (i.e., absent a high correlation to equities or bonds). These strategies may utilize leverage as allowed within their governing documents. The returns from these strategies have historically had a low-to-moderate correlation with the traditional equity markets, thus providing diversification benefits in addition to portfolio return enhancement. These strategies seek to control risks and maintain a focus on absolute returns. The inherent nature of these vehicles to serve as a "hedge" provides for the expectation that the program will lag the equity market during times when equities are performing above the long-term averages. However, when equities are performing below the long-term averages, the program would be expected to outperform the equity market. In addition, managers within this asset class have historically possessed significantly lower volatility relative to traditional equity managers.

Structure

The Systems have retained Albourne America, LLC (Albourne) as its hedged asset consultant. Albourne is an independent global advisory firm with a significant focus on hedge funds. The Systems utilize direct investments into hedge funds as opposed to incorporating fund-of-funds. The Systems' internal staff believes the benefits of direct investments, including lower fees, customized portfolio exposures, direct access to manager knowledge, and higher levels of transparency outweighed the benefit of quicker implementation offered by fund-of-funds.

The following chart indicates the strategy diversification of the Hedged Assets program as of June 30, 2018. The Systems manage the Hedged Assets portfolio to a blended benchmark of 25% Russell 3000 Index, 25% MSCI ACWI ex-USA net Index, and 50% Bloomberg Barclays U.S. Intermediate Credit Index.

Hedged Assets Diversification

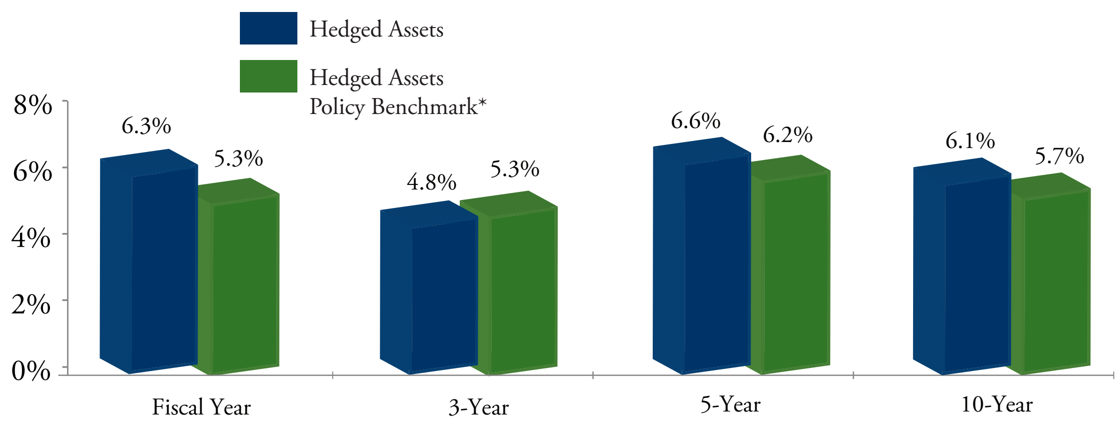


Performance

The total annualized return on the Systems' Hedged Assets portfolio was 6.3%, compared to the benchmark return of 5.3% for the fiscal year ended June 30, 2018.

Over the past ten years, the Hedged Assets program has marginally outperformed its policy benchmark of 5.7%. The performance relative to the policy benchmark is particularly significant given the strong performance of equities over this time period. The Russell 3000 Index was up an annualized 10.2% over the past ten years and the MSCI ACWI net Index was up an annualized 5.8%. As discussed previously, the hedging characteristics of the Hedged Assets program provide for the expectation that its performance will lag equity markets and/or its policy benchmark during periods of higher-than-normal equity returns. The Hedged Assets program is expected to outperform in more normal and down markets. As the table indicates on the following page, the longer-term performance was accomplished by assuming less than one-half of the volatility of the all country world stock index and achieving a beta of approximately 0.40 to the index, signifying that the Systems' portfolio moves up or down less than half as much as the world stock index.

Hedged Assets Performance



Hedged Assets Statistical Performance

Portfolio Characteristics	Fiscal Year	3-Year	5-Year	10-Year
Annualized Hedged Assets Return	6.3%	4.8%	6.6%	6.1%
Annualized Policy Benchmark Return*	5.3%	5.3%	6.2%	5.7%
Annualized S&P 500 Return	14.4%	11.9%	13.4%	10.2%
Annualized MSCI ACWI net Index	10.7%	8.2%	9.4%	5.8%
Annualized Standard Deviation of Composite	3.2%	3.7%	4.1%	6.8%
Annualized Standard Deviation of Policy Benchmark*	4.3%	5.7%	5.5%	9.4%
Annualized Standard Deviation of S&P 500	8.6%	10.2%	9.8%	14.7%
Annualized Standard Deviation of MSCI ACWI net Index	8.6%	10.7%	10.2%	16.4%
Beta to Policy Benchmark*	0.65	0.53	0.64	0.64
Beta to S&P 500	0.31	0.29	0.33	0.37
Beta to MSCI ACWI net Index	0.32	0.29	0.33	0.36

**The Hedged Assets Policy Benchmark is composed as follows: 50% Bloomberg Barclays U.S. Intermediate Credit Index, 25% MSCI ACWI ex-USA net Index, 25% Russell 3000 Index.*

Investment Advisors

As of June 30, 2018, the Systems had contracts with 17 external investment advisors who managed 26 portfolios. During the fiscal year new investment mandates were added with AQR and Hillhouse while a Pershing Square mandate was rebalanced to the Alpha Overlay program.

Hedged Assets Investment Advisors			
Investment Advisor	**Investment Style**	**Fair Value* As of June 30, 2018**	**% of Total Plan Fair Value**
AQR Absolute Return Fund	Relative Value	$ 233,424,555	0.5%
AQR Adaptive Multi-Strategy	Risk Parity	261,618,500	0.6%
AQR Diversified Beta Fund	Risk Parity	105,054,227	0.2%
AQR Real Asset Fund	Inflation Protection	47,497,755	0.1%
Bridgewater All Weather	Risk Parity	184,502,093	0.4%
Bridgewater Inflation Pool	Inflation Protection	75,225,148	0.2%
Bridgewater Pure Alpha II	Asset Allocation/Global Macro	561,346,125	1.3%
Bridgewater Pure Alpha Major Markets	Asset Allocation/Global Macro	6,514,074	0.0%
Carlson Black Diamond	Relative Value	166,749,307	0.4%
Davidson Kempner Institutional Partners	Event Driven	267,125,406	0.6%
Davidson Kempner Distressed Opportunities Fund	Distressed Debt/Credit	258,654,889	0.6%
GoldenTree Partners	Distressed Debt/Credit	508,247,556	1.2%
HBK Capital Management	Relative Value	185,067,980	0.4%
Hillhouse China Value Fund	Long-Biased Equity	93,764,596	0.2%
Indus Asia Pacific Fund	Equity Long/Short	117,440,826	0.3%
Maverick Fund USA	Equity Long/Short	129,101,848	0.3%
NISA Investment Advisors	Custom Beta	578,592,475	1.3%
Och-Ziff Domestic Partners	Multi-Strategy	278,374,218	0.6%
Och-Ziff Europe	Multi-Strategy	892,916	0.0%
Och-Ziff Asia	Multi-Strategy	16,076,601	0.1%
Owl Creek Overseas Fund	Event Driven	98,742,709	0.2%
Renaissance Institutional Equities Fund	Low Volatility Equity	599,323,838	1.4%
Stark Investments Limited Partners	Equity Long/Short	2,364,523	0.0%
UBS O'Connor Multi-Strategy Alpha	Relative Value	138,578,972	0.3%
Westwood Management	Income Focused/Quality	267,537,707	0.6%
York Capital Management	Event Driven	16,019,578	0.1%
Total		**$ 5,197,838,422**	**11.9%**

**Includes manager cash.*

Safe Assets Summary

As of June 30, 2018, the Safe Assets had a fair value of approximately $8.0 billion, representing 18.3% of total plan assets.

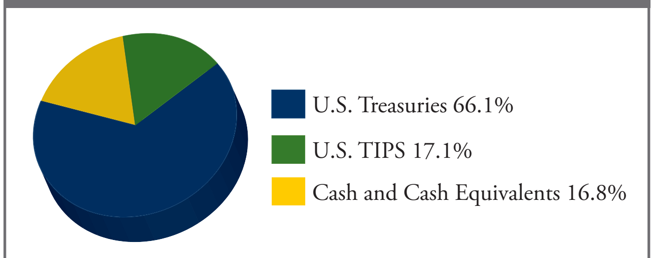
Investment Program Description

The Safe Assets program is intended to act as a source of safety and income for the Systems. The program is designed to create substantial diversification to the total portfolio and reduce volatility through low correlation to other asset classes. Specifically, the Safe Assets portfolio should provide asset protection at the total fund level in periods of economic stress.

Structure

As of June 30, 2018, NISA Investment Advisors was the only external investment manager within the Safe Assets program. The assets held within the program exhibit high liquidity and safety. The pie chart below depicts the Safe Assets Program by showing the sector and composite allocations as of June 30, 2018.

Safe Assets Allocation



The Systems' increased its allocation to Safe Assets from 17.0% as of June 30, 2017 to 18.3% as of June 30, 2018. The increased allocation includes additional funding to U.S. TIPS and the funding of a new Safe Assets cash account. The new cash account is an FDIC insured interest bearing account at J.P. Morgan with a competitive yield.

Market Overview

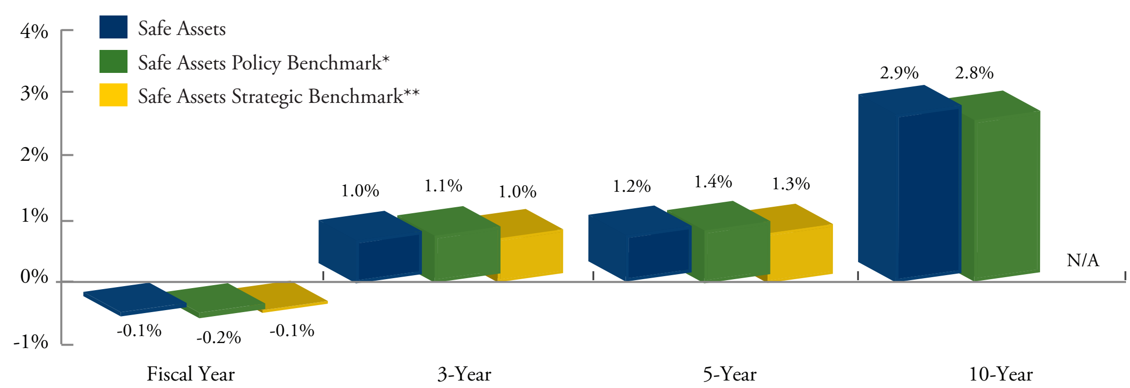
The yield on the 10-year Treasury increased to 2.9% on June 30, 2018 from 2.3% on June 30, 2017 as a result of continued U.S. economic growth and three Federal Reserve rate hikes during fiscal year 2018. The increase in interest rates throughout the year negatively impacted the price of Treasuries. The comprehensive measure of the U.S. Treasuries market (Bloomberg Barclays U.S. Treasuries Index) decreased 0.7% while the TIPS market (Bloomberg Barclays U.S. TIPS 1-10 Years) increased 1.5% for the year.

Performance

The total return for Safe Assets portfolio was -0.1% for the fiscal year ended June 30, 2018. The portfolio outperformed the benchmark for the year by 10 basis points. For the three- and five-year time periods, the Systems' slightly underperformed the Safe Assets benchmark while the portfolio return slightly outperformed the benchmark for the ten-year time period.

The absolute return of the Safe Assets portfolio is relatively modest over longer time periods. However, the Safe Assets portfolio continues to provide asset protection at the total fund level in periods of economic stress and ultimate liquidity to the Systems. An allocation to Safe Assets allows the Systems to accept market risk in other portions of the total fund portfolio.

Safe Assets Performance



Safe Assets Statistical Performance

Portfolio Characteristics	Fiscal Year	3-Year	5-Year	10-Year
Annualized Safe Assets Return	-0.1%	1.0%	1.2%	2.9%
Annualized Policy Benchmark Return*	-0.2%	1.1%	1.4%	2.8%
Annualized Strategic Benchmark Return**	-0.1%	1.0%	1.3%	NA
Excess Return	0.1%	-0.1%	-0.2%	0.1%
Annualized Standard Deviation of Composite	2.2%	2.4%	2.5%	3.2%
Annualized Standard Deviation of Policy Benchmark*	2.5%	2.7%	2.7%	3.4%
Beta to Policy Benchmark*	0.87	0.91	0.90	0.95
Beta to MSCI ACWI net Index	-0.09	-0.04	-0.04	-0.01

**The Safe Assets Policy Benchmark is composed as follows: 80.0% Bloomberg Barclays U.S. Treasury Index and 20.0% Bloomberg Barclays U.S. TIPS 1-10 Yrs. Index.*

***The Safe Assets Strategic Benchmark changes monthly based on the actual asset allocation at the end of the previous month. It was established more recently so a ten-year return is not available.*

The Systems have specifically taken less risk compared to the policy benchmark due to the inclusion of the cash and cash equivalents portfolios. Additionally, the Safe Assets program has a beta slightly less than 1.0 relative to the policy benchmark over all time periods, indicating less market volatility. Most importantly, the Safe Asset portfolio exhibits a beta of approximately zero relative to the all country world stock index (MSCI ACWI net Index) over longer time periods, indicating no correlation to risk assets. These statistics support one of the primary objectives of Safe Assets: diversification from other risk assets in the total fund.

Statistics

The following table displays the statistical characteristics of the Systems' Safe Assets program as of June 30, 2018 with comparisons shown to the Bloomberg Barclays U.S. Treasury Index. Additionally, the top ten Safe Asset holdings as of June 30, 2018 are shown in the table below the characteristics.

Safe Assets Characteristics		
Characteristics	**June 30, 2018 Systems' Safe Assets Program**	**June 30, 2018 Bloomberg Barclays U.S. Treasury Index**
Number of Securities	97	259
Average Coupon	1.8%	2.2%
Yield to Maturity	2.3%	2.7%
Average Maturity (Years)	6.1	7.7
Duration (Years)	5.1	6.1

Safe Assets - Top 10 Holdings		
Top 10 Largest Holdings* June 30, 2018	**Fair Value**	**% of Total Safe Assets**
United States Treasury Note, 1.25%, 04/30/2019	$ 397,524,771	4.9%
United States Treasury Note, 1.50%, 10/31/2019	303,320,383	3.8%
United States Treasury Note, 1.625%, 05/15/2026	285,999,482	3.5%
United States Treasury Note, 2.00%, 10/31/2022	214,334,125	2.7%
United States Treasury Note, 2.25%, 02/15/2027	201,797,362	2.5%
United States Treasury Note, 3.50%, 05/15/2020	198,397,573	2.5%
United States Treasury Bond, 2.50%, 02/15/2045	189,554,904	2.4%
United States Treasury Note, 1.375%, 08/31/2020	187,791,437	2.3%
United States Treasury Note, 2.25%, 01/31/2024	185,044,299	2.3%
United States Treasury Note, 2.125%, 09/30/2024	168,367,336	2.1%
Total	**$ 2,332,131,672**	**29.0%**

** Includes only actively managed separate accounts.*

A complete list of portfolio holdings is available upon request.

Investment Advisors

NISA Investment Advisors was the only external investment advisor within the Safe Assets program who managed three portfolios as of June 30, 2018. The Systems repositioned the Safe Assets program during the fiscal year by adding an interest bearing cash account with our master custodian J.P. Morgan.

Safe Assets Investment Advisor			
Investment Advisor	**Investment Style**	**Fair Value* As of June 30, 2018**	**% of Total Plan Fair Value**
NISA Investment Advisors	U.S. Treasuries	$ 5,314,288,918	12.1%
NISA Investment Advisors	U.S. TIPS	1,375,382,420	3.1%
NISA Investment Advisors	Cash Equivalents	984,869,520	2.3%
J.P. Morgan Cash Account	Interest Bearing Cash Account	367,587,600	0.8%
Total		**$ 8,042,128,458**	**18.3%**

**Includes manager cash.*

Private Risk Assets Summary

As of June 30, 2018, the Private Risk assets had a fair value of approximately $7.9 billion, representing 18.0% of total plan assets.

Investment Program Description

The allocation to Private Risk investments is viewed as a separate asset class for inclusion in the Systems' overall investment portfolios. The process of building the Systems' Private Risk program and fully funding the target allocation is expected to occur over a period of several years. Additional new investments will be necessary beyond the funding period in order to maintain the long-term target allocation. The three programs within the Private Risk Assets composite are Private Equity, Private Real Estate and Private Credit. Each program within the Private Risk allocation is a separate multi-manager composite that is treated generally as a single portfolio. Each program serves a specific and distinct role within the overall Private Risk composite and also within the overall Total Plan allocation. Over time, the Private Risk composite serves as a long-term vehicle to supply the underlying beta exposure to a portfolio of private assets.

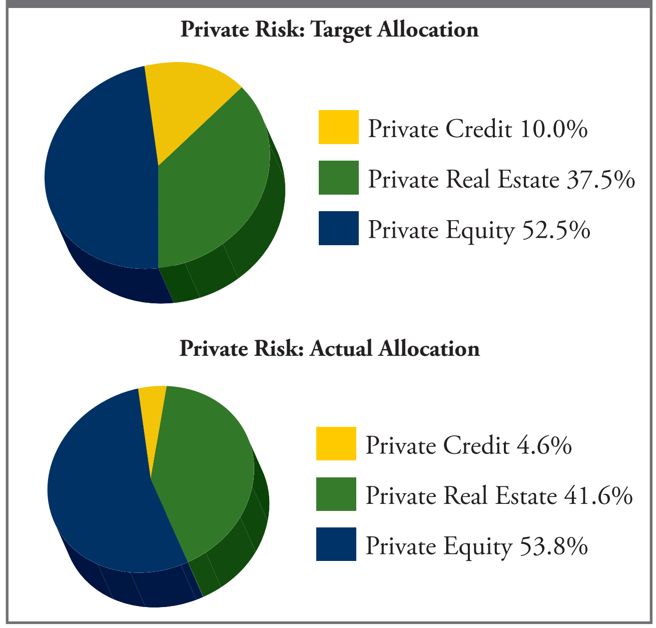
Investments in Private Risk Assets differ substantially from the Systems' public markets asset classes (Public Risk Assets and Safe Assets) in part because they are typically very long-term in nature, not publicly traded, relatively illiquid and offer the potential for substantially higher returns (along with a commensurate level of risk). The illiquid nature of Private Risk Assets can result from the form of the asset or security itself, or it can be a function of the investment structure being utilized (e.g., a limited partnership).

Due to the fact that Private Risk Assets are not publicly traded, pricing and performance measurements prior to the realization of gains are less reliable than in the traditional publicly traded asset classes. The Systems continually monitor the valuation policies and procedures utilized for such investments.

Structure

As of June 30, 2018, 53.8% of Private Risk assets were invested in the Private Equity program, 41.6% in the Private Real Estate program, and 4.6% in the Private Credit program. Each of these programs is discussed in more detail on the following pages.

Private Risk Assets Allocation

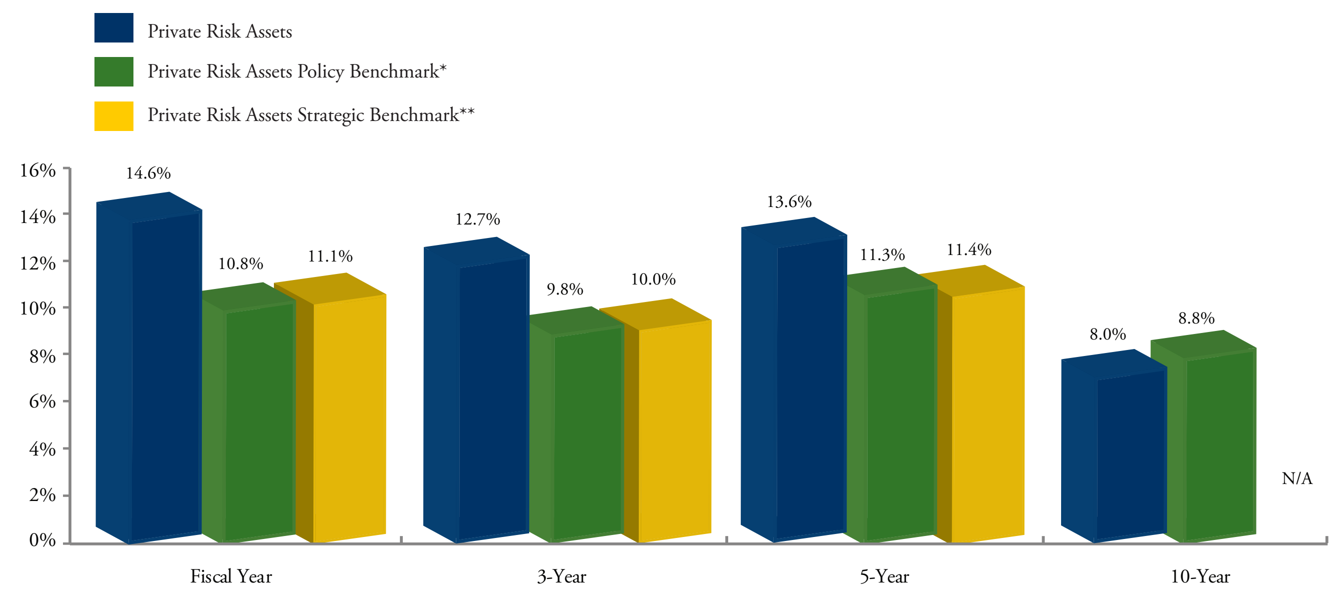


Performance

The total return for the Private Risk portfolio was 14.6%, compared to the policy benchmark return of 10.8% for the fiscal year ended June 30, 2018. For the three- and five-year time periods, the Systems also significantly outperformed the benchmark. The ten-year return was marginally below the benchmark due to the immaturity of the programs and the impacts of the financial crisis of 2008 and 2009.

The pricing and performance methodology utilized for private assets can provide for significant performance variances over short time periods. For instance, the Systems utilize a liquid benchmark (Russell 3000 Index) to measure an illiquid (private equity) asset class. Thus, there will be significant performance differences over short time periods in volatile markets. Due to the long term nature of Private Risk assets, the performance can be more appropriately judged over a longer timeframe. As the table below indicates, the Private Risk portfolios have produced excellent absolute returns over all time periods.

Private Risk Assets Performance



Private Risk Assets Statistical Performance

Portfolio Characteristics	Fiscal Year	3-Year	5-Year	10-Year
Annualized Private Risk Assets Return	14.6%	12.7%	13.6%	8.0%
Annualized Policy Benchmark Return*	10.8%	9.8%	11.3%	8.8%
Annualized Strategic Benchmark Return**	11.1%	10.0%	11.4%	N/A
Excess Return	3.8%	2.9%	2.3%	-0.8%

** The Private Risk Assets Policy Benchmark is composed as follows: 52.5% Russell 3000 Index, 37.5% NFI-ODCE Index and 10.0% ICE BofAML U.S. High Yield Master II Index.*

*** The Private Risk Assets Strategic Benchmark changes monthly based on the actual asset allocation at the end of the previous month. It was established more recently so a 10-year return is not available.*

Private Equity Program Summary

As of June 30, 2018, the Private Equity assets had a fair value of approximately $4.2 billion, representing 9.7% of total plan assets

Investment Program Description

The Private Equity asset class is comprised of investment opportunities not typically included within the public equity and fixed income markets. Private Equity investments provide financing for start-up companies, private middle market companies, firms in financial distress and public and non-public firms seeking buyout financing. Private Equity investments can be classified into three basic sub-asset class categories:

- Venture Capital,
- Buyouts, and
- Debt-Related.

Investments in the sub-asset classes can be made in the U.S. or foreign countries. In total, the allocation to Non-U.S. Private Equity investments will not exceed 40.0% of the overall Private Equity target allocation. The risks associated with Private Equity will be viewed both in isolation and within the context of the entire fund.

In January 2014, the Board of Trustees approved the development and implementation of a Private Equity Co-Investment Program. The Co-Investment Program is expected to further advance the goals and objectives of the overall Private Equity Program by obtaining additional exposure to underlying portfolio company investments through direct equity investments made on a side-by-side basis with private equity funds where the Systems have an existing relationship. Co-investments serve to increase exposure to the Private Equity asset class with little or no additional fees and/or performance carry paid to the underlying private equity partnerships. The objective of the Co-Investment Program is to leverage existing, high-quality relationships with private equity managers in order to increase commitments to the asset class in a format that does not materially increase overall risk, while simultaneously helping to lower fees and performance carry.

Structure

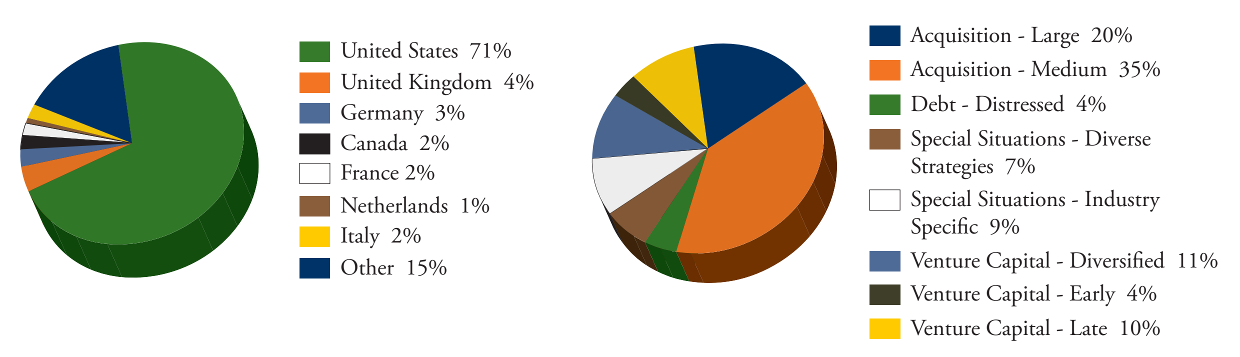
As of June 30, 2018, Private Equity assets committed* for investment were $9.1 billion. The fair value of funds that had been drawn down and actually invested as of June 30, 2018 was approximately $4.2 billion, representing 9.7% of total plan assets. The Systems private equity investment commitments that have not yet been funded were approximately $3.2 billion as of June 30, 2018.

The objective for the Systems' allocation to Private Equity is to achieve returns that are higher than those attainable in the public equity markets with the added benefit of diversification. The long-term target allocation to Private Equity is 12.0%. However, as of June 30, 2018, the actual allocation for the Systems was just 9.7% because the long-term and illiquid nature of the private equity asset class dictates that capital must be invested at a measured pace. In addition, private equity investments have made record distributions in recent years. Pathway Capital Management has been retained by the Systems to provide private equity investment management services through three structures; a discretionary fund-of-funds relationship, an advisory relationship and a co-investment program. Additionally, the Systems have invested in private equity secondary funds and also utilize Albourne America, LLC to provide private equity advisory services.

The following pie charts show the diversification (utilizing the market value of the assets that have been invested) of the Systems' private equity holdings as of June 30, 2018 from both strategy and country perspectives.

** Committed capital reflects the total amount of capital that the Systems are legally obligated to supply to the partnerships and funds as the capital is needed to invest in underlying holdings. Fair value reflects capital that has actually been drawn and invested by the partnerships and funds.*

Private Equity Strategy and Geographic Diversification



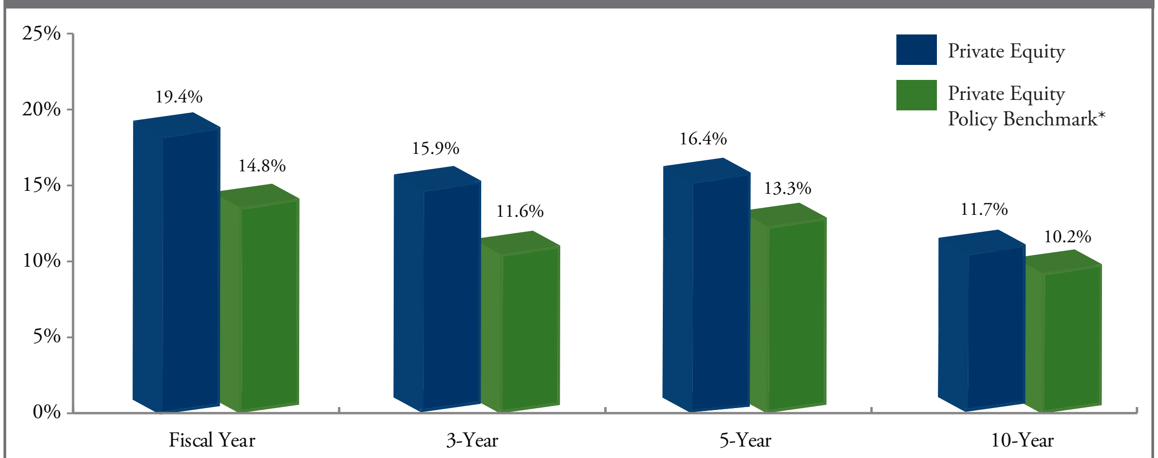
Market Overview

Private equity markets had an excellent year, driven by several positive factors including solid economic data, strong corporate earnings and accommodative credit markets. Exit opportunities were particularly robust for private equity firms during the year as merger and acquisition activity reached record levels and IPO activity came in stronger than last year as well.

Performance

The total return for the Private Equity program was 19.4%, compared to the benchmark return of 14.8% for the fiscal year ended June 30, 2018. While short-term returns are not overly insightful for the Private Equity program in comparison to its benchmark, the one-year return exceeded the benchmark by 460 basis points. The private equity benchmark utilizes a liquid public equity index (Russell 3000 Index) to measure an illiquid (private equity) asset class. As such, there could be significant performance differences over short time periods in volatile markets. Due to the long term nature of the asset class, the performance of a private equity portfolio can be more appropriately judged over a longer timeframe. As the table below indicates, the Private Equity portfolio has produced excellent absolute and relative returns over all time periods. The ten-year return exceeded the benchmark by 150 basis points. These excess returns are net of fees and expenses.

Private Equity Performance



Private Equity Statistical Performance

Portfolio Characteristics	Fiscal Year	3-Year	5-Year	10-Year
Annualized Private Equity Return	19.4%	15.9%	16.4%	11.7%
Annualized Policy Benchmark Return*	14.8%	11.6%	13.3%	10.2%
Excess Return	4.6%	4.3%	3.1%	1.5%

**The Private Equity Policy Benchmark is the Russell 3000 Index.*

Investment Advisors

As of June 30, 2018, the Systems were invested in 143 separate partnerships with 63 firms within the Private Equity asset class. In fiscal year 2018, the Systems committed to 31 new partnerships for $677 million. Additionally, the Systems received total distributions from the private equity partnerships of approximately $961 million in fiscal year 2018.

Private Equity Investment Advisors

Investment Advisor	Investment Style	Fair Value* As of June 30, 2018	% of Total Plan Fair Value
Advent International GPE VII-B and VIII	Acquisition - Medium	$ 79,078,533	0.2%
Baring Asia VI	Acquisition - Medium	21,707,876	0.1%
Battery Ventures XII and XII Side Fund	Venture Capital	262,518	0.0%
BC European IX	Acquisition - Large	30,835,409	0.1%
Blackstone Capital Partners V and VI	Acquisition - Large	33,980,859	0.1%
Canaan Partners IX, X and XI	Venture Capital	54,208,372	0.1%
Carlyle Europe Partners III	Acquisition - Medium	3,656,136	0.0%
Carlyle Partners IV, V and VI	Acquisition - Large	46,207,832	0.1%
Centerbridge Capital Partners I, II and III	Special Situations - Diverse Strategies	49,939,163	0.1%
Centerbridge Capital Special Credit Partners II and III	Debt - Distressed	32,906,911	0.1%
Charlesbank Equity Fund IX	Special Situations - Diverse Strategies	2,205,159	0.0%
Chequers Capital XVII	Acquisition - Medium	548,899	0.0%
Clayton, Dubilier & Rice Fund X	Acquisition - Medium	2,813,993	0.0%
Clearlake Capital Partners V	Acquisition - Medium	2,957,775	0.0%
Coller International Partners VII	Secondary Fund	82,898,066	0.2%
CVC Capital Partners VI and VII	Acquisition - Large	49,448,475	0.1%
CVC European Equity Partners IV and V	Acquisition - Large	11,549,403	0.0%
CVC European Equity Tandem Fund	Acquisition - Large	146,383	0.0%
DEFY Partners I	Venture Capital	1,352,734	0.0%
Encap Energy IX, X, XI and VIII Co-Investors	Special Situations - Industry Specific	78,688,053	0.2%
EnCap Flatrock Midstream III and IV	Special Situations - Industry Specific	6,062,171	0.0%
Exponent Partners II	Acquisition - Medium	2,869,143	0.0%
First Reserve Fund XI and XII	Special Situations - Industry Specific	8,107,927	0.0%
General Catalyst Group IX	Venture Capital	1,561,452	0.0%
Genstar Capital Partners V and VIII	Acquisition - Medium	4,035,657	0.0%
Glendon Opportunities Fund	Debt - Distressed	28,350,372	0.1%
GTCR Fund IX, X, XI and XII	Acquisition - Medium	58,171,476	0.2%
Hellman & Friedman VI, Spock 1, VII and VIII	Acquisition - Large	83,193,271	0.2%
Hillhouse Fund IV	Acquisition - Large	3,879,007	0.0%
Huron Fund V	Acquisition - Medium	1,800,625	0.0%
Insight Venture Partners IX and X	Special Situations - Diverse Strategies	45,501,077	0.1%
Institutional Investment Partners XV and XVI	Venture Capital	21,474,006	0.1%
Kelso Investment Associates VIII	Acquisition - Medium	16,374,664	0.0%
KKR 2006 Fund	Acquisition - Large	11,520,526	0.0%
KRG Fund IV	Acquisition - Medium	2,398,286	0.0%
Lexington Capital Partners VI-B, VII and VIII	Secondary Fund	200,541,575	0.5%
Lone Star Fund X	Debt - Distressed	41,696,346	0.1%
Madison Dearborn VI and VII	Acquisition - Large	47,366,739	0.1%
Marlin Equity V and Heritage II	Acquisition - Medium	6,346,803	0.0%
Montagu III and IV	Acquisition - Medium	23,075,975	0.1%
New Enterprise Associates 13, 14, 15 and 16	Venture Capital	151,420,268	0.3%
New Horizon VI: Advantech II and Redview II	Special Situations - Diverse Strategies	168,517	0.0%
New Mountain Partners V	Acquisition - Medium	8,585,350	0.0%
Nordic VII, CVI Alpha and VIII	Acquisition - Medium	56,695,212	0.1%
Oak Investment Partners XIII	Venture Capital	27,295,001	0.1%
OCM Principal Opportunities Fund IV, VII, VIIb, IX and Xb	Debt - Distressed	24,586,184	0.1%
Odyssey Investment Partners IV and V	Acquisition - Medium	26,372,976	0.1%
Onex Partners II, III, IV and ONCAP IV	Acquisition - Medium	54,212,274	0.1%
Pamlico Capital IV	Acquisition - Medium	5,664,620	0.0%
Pantheon Global Secondary Fund III and IV	Secondary Fund	35,891,806	0.1%
Pathway Capital Management	Fund-of-Funds	1,897,811,564	4.3%
Paul Capital Partners IX	Secondary Fund	27,663,762	0.1%
Permira IV, V and VI	Acquisition - Medium	57,983,887	0.1%
Providence Equity Partners VI	Special Situations - Industry Specific	11,964,216	0.0%
Quad-C Partners IX and VIII	Acquisition - Medium	55,292,504	0.1%
Quantum Energy Partners V, V-C, VI, VI-C , VII and VII-C	Special Situations - Industry Specific	70,743,229	0.2%
The Resolute Fund II and III	Acquisition - Medium	51,485,620	0.1%
Sentinel Junior Capital I	Debt - Mezzanine	158,746	0.0%
Silver Lake Partners III	Special Situations - Industry Specific	17,475,790	0.0%
Spectrum Equity Investors VI, VII and VII	Special Situations - Diverse Strategies	32,714,742	0.1%
TA XI and XII	Special Situations - Diverse Strategies	36,669,899	0.1%
TCV IX, VI, VII and VIII	Venture Capital	115,955,045	0.3%
Thoma Bravo Discover Fund	Acquisition - Medium	11,514,511	0.0%
Thoma Bravo Fund XII	Acquisition - Large	28,078,150	0.1%
Thoma Bravo Special Opps Fund II	Acquisition - Medium	40,834,465	0.1%
Thoma Cressey Fund VIII	Acquisition - Medium	526,429	0.0%
TPG Partners V and VI	Acquisition - Large	17,435,256	0.0%
Trident Capital Fund VII	Acquisition - Medium	14,838,105	0.0%
Vista Equity Partners V, VI and Foundation III	Acquisition - Medium	117,994,523	0.3%
Wayzata Opportunities Fund I, II and III	Debt - Distressed	12,552,705	0.0%
Wind Point Partners VI and VII	Acquisition - Medium	13,312,368	0.0%
Stock distribution account	Public Stocks	7,939,705	0.0%
Total		**$ 4,231,557,076**	**9.7%**

**Fair values are reported by the Systems' Private Equity advisors. Fair values reflect the most current net asset values. In instances where the most current net asset values were not as of June 30, 2018, the net asset values utilized were cash flow adjusted through June 30, 2018.*

Private Credit Program Summary

As of June 30, 2018, the Private Credit assets had a fair value of approximately $364 million, representing 0.8% of total plan assets.

Investment Program Description

Investments in Private Credit are similar to Private Equity investments in that they are typically very long-term in nature, not publicly traded, relatively illiquid, and offer the potential for substantially higher returns (along with a commensurate level of risk). The Private Credit portfolio also differs from the Private Equity portfolio, and is a separate and distinct composite within Private Risk Assets. The Private Credit asset class is comprised primarily of debt-related investments that provide a current yield along with equity participation (usually warrants) referred to as an 'equity kicker.' Primary strategies are distressed debt, bankruptcy restructurings, mezzanine debt, bank loans and other credit-driven or debt-related investment strategies. Investments can be made in the U.S. or foreign countries. In total, the allocation to Non-U.S. Private Credit investments will not exceed 40% of the overall Private Credit target allocation. The risks associated with Private Credit will be viewed both in isolation and within the context of the entire fund.

Structure

As of June 30, 2018, Private Credit assets committed* for investment were $1.5 billion. The fair value of funds that have been drawn down and actually invested as of June 30, 2018 was approximately $364 million, representing 0.8% of total assets. The Systems' private credit investment commitments that have not yet been funded were approximately $622 million as of June 30, 2018.

The objective for the Systems' allocation to Private Credit is to achieve returns that are higher than those attainable in the public markets with the added benefit of diversification. The long-term and illiquid nature of the Private Credit asset class dictates that capital must be invested at a measured pace. Pathway Capital Management has been retained by the Systems to provide private credit investment management services through two structures; a discretionary fund-of-funds relationship and an advisory relationship. Albourne America, LLC has also been retained to provide private credit advisory services.

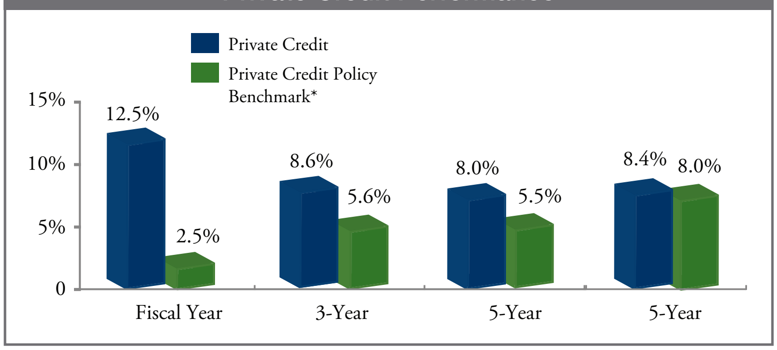
Market Overview

Private Credit markets provided attractive returns in fiscal year 2018 as a result of low default rates, accommodating debt market conditions and healthy business and industry operating conditions. High yield markets returned 2.5% for the year as measured by the ICE BofAML U.S. High Yield Master II Index.

Performance

The total return for the Private Credit program was 12.5%, compared to the benchmark return of 2.5% for the fiscal year ended June 30, 2018. Short-term returns can be volatile for the Private Credit program in comparison to a public benchmark, as discussed previously; private assets are more appropriately evaluated over longer time frames. As the table below indicates, the Private Credit portfolio has produced very strong absolute and relative returns over all time periods.

Private Credit Performance



Private Credit Statistical Performance

Portfolio Characteristics	Fiscal Year	3-Year	5-Year	10-Year
Annualized Private Credit Return	12.5%	8.6%	8.0%	8.4%
Annualized Policy Benchmark Return*	2.5%	5.6%	5.5%	8.0%
Excess Return	10.0%	3.0%	2.5%	0.4%

**The Private Credit Policy Benchmark is the ICE BofAML U.S. High Yield Master II Index.*

** Committed capital reflects the total amount of capital that the Systems are legally obligated to supply to the partnerships and funds as the capital is needed to invest in underlying holdings. Fair value reflects capital that has actually been drawn and invested by the partnerships and funds.*

Investment Advisors

As of June 30, 2018, the Systems were invested in 19 separate partnerships with 15 firms within the Private Credit asset class. Six new commitments were made to the Private Credit asset class during fiscal year 2018 for $415 million. The Systems received total distributions from the private credit partnerships of approximately $117 million in fiscal year 2018.

Private Credit Investment Advisors

Investment Advisor	Investment Style	Fair Value* As of June 30, 2018	% of Total Plan Fair Value
Bayview Opportunity Domestic V	Debt - Distressed	$ 12,862,246	0.0%
Benefit Street Partners Debt Fund IV	Debt - Lending	35,089,799	0.1%
Caltius IV	Debt - Mezzanine	1,264,976	0.0%
Centerbridge Special Capital Partners	Debt - Distressed	1,815,006	0.0%
EIG Energy Fund XVI	Debt - Energy	75,825,021	0.2%
Encap Fund VII	Special Situations - Industry Specific	2,118,809	0.0%
Encap Fund VIII	Special Situations - Industry Specific	13,834,746	0.0%
GSO Capital Solutions Fund III	Debt - Distressed	1,925,969	0.0%
H.I.G Capital Bayside IV	Debt - Distressed	10,628,138	0.0%
H.I.G Capital Whitehorse	Debt - Distressed	49,163,339	0.1%
HPS Specialty Loan Fund 2016	Debt - Mezzanine	27,830,874	0.1%
Indigo Capital V	Debt - Mezzanine	1,478,679	0.0%
Lone Star Real Estate Fund II	Debt - Distressed	3,057,531	0.0%
OCM Opportunities Fund VIII	Debt - Distressed	3,359,285	0.0%
OCM Opportunities Fund VIII b	Debt - Distressed	16,671,829	0.0%
Pathway Capital Management	Fund-of Funds	62,140,529	0.2%
TA Subordinated Debt Fund III	Debt - Mezzanine	10,439,228	0.0%
TA Subordinated Debt Fund IV	Debt - Mezzanine	19,094,413	0.1%
TSSP Adjacent Opportunities Partners	Debt - Multi Strategy	15,451,201	0.0%
Total		**$ 364,051,618**	**0.8%**

**Fair values are reported by the Systems' Private Credit advisors. Fair values reflect the most current net asset values. In instances where the most current net asset values were not as of June 30, 2018, the net asset values utilized were cash flow adjusted through June 30, 2018.*

Private Real Estate Program Summary

As of June 30, 2018, the Private Real Estate assets had a fair value of approximately $3.3 billion, representing 7.5% of total plan assets.

Investment Program Description

The Real Estate allocation is intended to provide exposure to a diversified portfolio of institutional quality private real estate investments that will provide meaningful, consistent returns and act as a hedge against inflation and as a diversifier to the overall investment portfolio. The specific objectives of the real estate allocation will be to optimize yield and return, preserve capital and enhance portfolio value across market cycles. The risks associated with Private Real Estate will be viewed both in isolation and within the context of the entire fund.

Structure

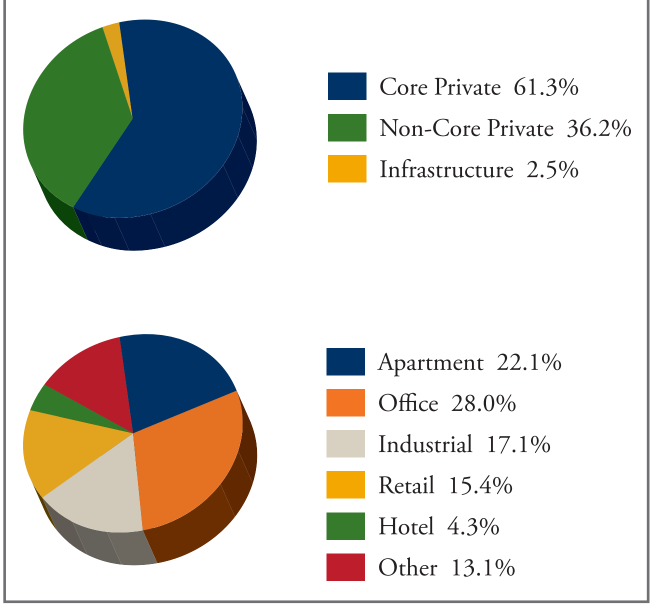
As of June 30, 2018, the Systems' private real estate assets committed* for investment were $4.7 billion. The fair value of funds that had been drawn down and actually invested as of June 30, 2018 was approximately $3.3 billion, representing 7.5% of total assets. The Systems' private real estate investment commitments that had not yet been funded were approximately $1.1 billion as of June 30, 2018.

Within the overall Real Estate allocation, the Systems have established a 55% target allocation to non-core real estate (inclusive of infrastructure) and a 45% allocation to core private real estate. Non-Core investments represent those properties and/or investment strategies that require specialized acquisition and management expertise or skill to mitigate the business and leasing risk that may be associated with individual investments. Non-Core investments have greater associated risk compared to Core investments. Core investments include existing, substantially leased income-producing properties located mainly in metropolitan areas that exhibit reasonable economic diversification and growth.

** Committed capital reflects the total amount of capital that the Systems are legally obligated to supply to the partnerships and funds as the capital is needed to invest in underlying holdings. Market value reflects capital that has actually been drawn and invested by the partnerships and funds.*

The following pie charts indicate the current allocation to real estate investment strategies utilizing the market value of the Systems' invested real estate assets and the diversification within the real estate composite by property type.

Private Real Estate Diversification



** Committed capital reflects the total amount of capital that the Systems are legally obligated to supply to the partnerships and funds as the capital is needed to invest in underlying holdings. Fair value reflects capital that has actually been drawn and invested by the partnerships and funds.*

Market Overview

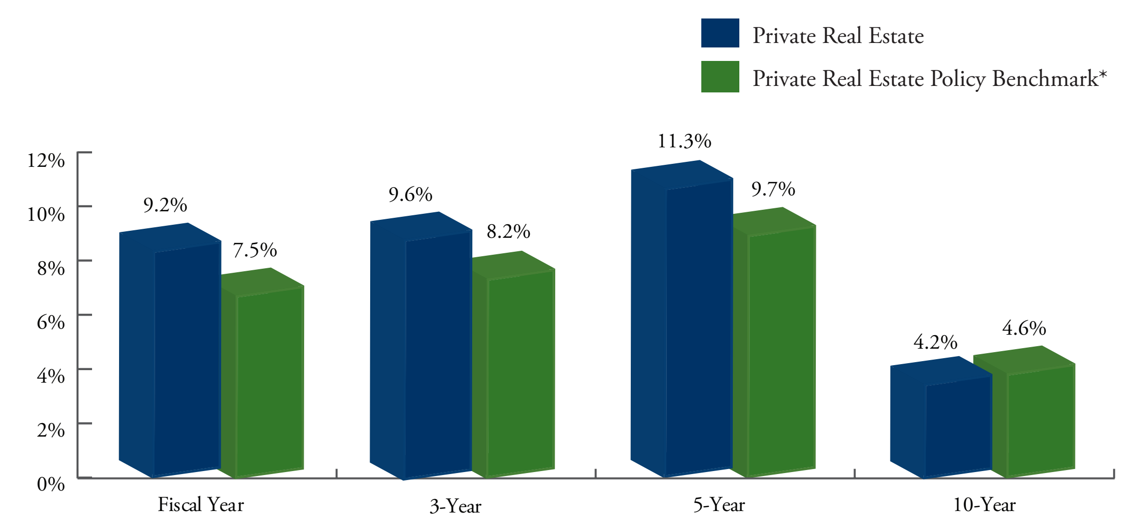
Overall it was a strong year for the real estate market. However, there are signs of growth moderating as occupancy rates have recently plateaued at historically high levels for all property types. Investment activity was stable throughout the year with all property types experiencing positive rent growth. The private real estate benchmark, the NCREIF Fund Index – Open Diversified Core Equity (NFI-ODCE), increased 7.5% for fiscal year 2018.

The Systems maintain a sizable allocation to high-quality, stabilized real estate assets (core) due to the secure income return. Additionally, the Systems have an allocation to non-core assets to enhance return to the overall real estate portfolio. The Systems will continue to focus real estate efforts going forward on investments that complement the existing portfolio.

Performance

The total return for the Private Real Estate program was 9.2%, compared to the benchmark return of 7.5% for the fiscal year ended June 30, 2018. The Systems' Private Real Estate program has produced excellent absolute and relative returns for all time periods as noted below, with the exception of the 10-year time period. The underperformance for the 10-year time period was primarily due to the significant downward pressure on real estate valuations during the credit crisis of 2008 and 2009.

Private Real Estate Performance



Private Real Estate Statistical Performance

Portfolio Characteristics	Fiscal Year	3-Year	5-Year	10-Year
Annualized Private Real Estate Return	9.2%	9.6%	11.3%	4.2%
Annualized Policy Benchmark Return*	7.5%	8.2%	9.7%	4.6%
Excess Return	1.7%	1.4%	1.6%	-0.4%

*"*Effective January 1, 2016 the Real Estate Policy Benchmark is the NCREIF Open End Diversified Core Equity Index (NFI-ODCE). The NCREIF Property Index is used for prior periods.*

Investment Advisors

As of June 30, 2018, the Systems were invested in 58 separate partnerships with 29 firms within the Private Real Estate asset class. In fiscal year 2018, the Systems committed to eight new partnerships totaling $610 million. Additionally, the Systems received total distributions from the real estate partnerships of approximately $472 million in fiscal year 2018.

Private Real Estate Investment Advisors

Investment Advisor	Investment Style	Fair Value* As of June 30, 2018	% of Total Plan Fair Value
AEW Core Property Fund	Core - Private	$ 99,274,234	0.2%
Alinda Infrastructure Fund I	Infrastructure	204,030	0.0%
Alterna Core Capital Assets Fund II	Infrastructure	49,258,401	0.1%
Asana Partners Fund I, L.P.	Non-Core - Private	51,895,780	0.1%
Blackstone R.E. Partners V, VI, VII, VIII	Non-Core - Private	157,774,444	0.4%
Blackstone Real Estate Partners Asia I and II	Non-Core - Private	62,154,544	0.1%
Brockton Capital II	Non-Core - Private	19,526,373	0.1%
Carlyle Europe Real Estate Partners III	Non-Core - Private	4,983,584	0.0%
Carlyle Property Investors	Core - Private	143,181,672	0.3%
Carlyle Realty V, VI and VII	Non-Core - Private	109,318,613	0.3%
CBRE US Value 6 and 7	Non-Core - Private	48,915,800	0.1%
CIM Fund III and VIII	Non-Core - Private	92,676,456	0.2%
CIM Urban REIT	Non-Core - Private	19,988,794	0.1%
Colony Investors VIII	Non-Core - Private	1,805,600	0.0%
CPI Capital Partners Europe	Non-Core - Private	849,637	0.0%
Dune Real Estate Fund I	Non-Core - Private	1,331,392	0.0%
Exeter Industrial Value Fund IV	Non-Core - Private	20,261,092	0.1%
Forum Asian Realty Income II	Non-Core - Private	46,721	0.0%
Heitman Value Partners II and III	Non-Core - Private	33,081,515	0.1%
JPMorgan Special Situation Property Fund	Non-Core - Private	165,418,259	0.4%
JPMorgan Strategic Property Fund	Core - Private	349,182,821	0.8%
KKR Real Estate Partners America I and II	Non-Core - Private	39,349,042	0.1%
LaSalle Asia Opportunity Fund II and III	Non-Core - Private	1,510,061	0.0%
LaSalle Japan Logistics Fund II	Non-Core - Private	117,070	0.0%
LaSalle Property Fund	Core - Private	218,320,908	0.5%
Lone Star V and VI	Non-Core - Private	12,178,628	0.0%
Lone Star Real Estate Fund	Non-Core - Private	2,309,542	0.0%
Lone Star V Co-Investment Fund	Non-Core - Private	12,686	0.0%
Macquarie Infrastructure Partners	Infrastructure	31,315,835	0.1%
Morgan Stanley Prime Property Fund	Core - Private	409,364,013	0.9%
North Haven Real Estate Fund V International	Non-Core - Private	1,336,847	0.0%
Noble Hospitality Fund I and III	Non-Core - Private	50,023,486	0.1%
Principal Enhanced Property Fund	Core - Private	49,090,630	0.1%
Prologis Targeted U.S. Logistics Holdings	Core - Private	201,663,169	0.5%
Prudential PRISA Fund	Core - Private	185,428,294	0.4%
Prudential PRISA III	Non-Core - Private	87,768,165	0.2%
Standard Life European Real Estate Fund I, II and III	Non-Core - Private	96,393,561	0.2%
Starwood Hospitality Fund	Non-Core - Private	3,008,939	0.0%
UBS Trumbull Property Fund	Core - Private	353,208,734	0.8%
Westbrook R.E. Fund VII, VIII, IX and X	Non-Core - Private	101,411,444	0.2%
Total		**$ 3,274,940,816**	**7.5%**

**Fair values are reported by the Systems' Private Real Estate advisors. Fair values reflect the most current net asset values. In instances where the most current net asset values were not as of June 30, 2018, the net asset values utilized were cash flow adjusted through June 30, 2018.*

U.S. Public Equity Broker Commissions Report				
Brokerage Firm	**Shares Traded**	**Dollars Traded**	**Commissions Paid**	**Cost Per Share**
Barclays Capital, Inc.	16,610,943	$ 832,575,063	$ 790,741	$ 0.05
SG Cowen & Co	15,110,659	749,332,600	463,482	0.03
Merrill Lynch	27,451,409	1,267,610,824	320,692	0.01
JP Morgan Chase	22,990,487	963,727,030	272,920	0.01
Instinet, LLC	37,328,087	1,660,418,760	246,037	0.01
UBS Securities, LLC	7,503,684	398,935,254	191,514	0.03
Weeden & Co	29,920,641	1,509,645,317	176,349	0.01
Investment Technology Group	16,460,728	756,063,855	135,475	0.01
Cap Institutional Services	4,370,259	236,279,819	127,203	0.03
Bank of New York	18,263,797	726,837,696	101,582	0.01
Other (<$100,000)	120,715,344	4,968,354,727	1,307,841	0.01
Total	**316,726,038**	**$14,069,780,945**	**$ 4,133,836**	**$ 0.01**

Non-U.S. Public Equity Broker Commissions Report				
Brokerage Firm	**Shares Traded**	**Dollars Traded**	**Commissions Paid**	**Cost (Basis Points)**
Instinet, LLC	159,109,611	$ 807,983,979	$ 272,420	3.4
Merrill Lynch	100,995,311	598,393,595	209,508	3.5
Morgan Stanley & Co, Inc.	81,566,613	454,886,322	176,492	3.9
Goldman Sachs and Co	83,104,334	465,964,464	166,291	3.6
Credit Suisse Securities, LLC	150,674,590	272,706,207	121,074	4.4
JP Morgan Chase	36,091,998	235,933,091	102,664	4.4
Investment Technology Group	41,473,072	270,403,731	95,292	3.5
Deutsche Bank	31,654,265	297,713,886	93,796	3.2
Citigroup Global Markets, Inc.	33,882,344	124,737,733	86,806	7.0
UBS Securities, LLC	21,813,336	132,489,918	60,548	4.6
Other (<$50,000)	195,382,881	958,219,523	494,132	5.2
Total	**935,748,355**	**$ 4,619,432,449**	**$ 1,879,023**	**4.1**

Investment Summary as of June 30, 2018			
		Percent of Total Fair Value	
Asset Type	**Fair Value**	**FY 2018**	**FY 2017**
Public Risk Assets			
U.S. Public Equity	$ 12,845,033,942	29.3%	29.7%
Non-U.S. Public Equity	7,391,891,947	16.9%	17.2%
Public Credit	2,338,890,310	5.3%	6.9%
Hedged Assets	5,197,838,422	11.9%	12.1%
Total Public Risk Assets	***27,773,654,621***	***63.4%***	***65.9%***
Safe Assets			
U.S. Treasuries	5,314,288,918	12.1%	12.9%
U.S. TIPS	1,375,382,420	3.1%	2.1%
Cash & Cash Equivalents	1,352,457,120	3.1%	2.1%
Total Safe Assets	***8,042,128,458***	***18.3%***	***17.1%***
Private Risk Assets			
Private Real Estate	3,274,940,816	7.5%	7.6%
Private Equity	4,231,557,076	9.7%	8.4%
Private Credit	364,051,618	0.8%	0.7%
Total Private Risk Assets	***7,870,549,510***	***18.0%***	***16.7%***
Securities Lending Collateral	***15,534***	***0.0%***	***0.0%***
Cash & Equivalents*	***112,965,463***	***0.3%***	***0.3%***
Total Investments**	**$ 43,799,313,586**	**100.0%**	**100.0%**
Reconciliation with Financial Statements			
Total from above	$ 43,799,313,586		
Accrued payable for investments purchased	2,948,021,102		
Accrued income payable	1,189,322		
Accrued receivable for investments sold	(2,332,007,193)		
Accrued income receivable	(86,376,817)		
Securities lending collateral	(15,534)		
Short-term investments designated for benefits	(597,228,326)		
Statements of Fiduciary Net Position	**$ 43,732,896,140**		

**Managers may hold cash or cash equivalents as part of an active management strategy. Cash or cash equivalents held as part of an active management strategy are not separately listed.*

*** Total Investments includes accrued income and securities lending collateral as of June 30, 2018.*

Investment Expenses for the Fiscal Year Ended June 30, 2018

Investment Managers	
Investment Management Fees	
NISA Investment Advisors - Core	$ 3,903,713
NISA Investment Advisors - TIPS	582,719
Safe Assets Fees	4,486,432
NISA Investment Advisors - Corporate	1,411,714
Oaktree Bank Loans	1,925,326
Pacific Investment Management Company	693,143
Public Credit Fees	4,030,183
Analytic Investors, LLC	2,169,198
AQR Capital Management	2,974,058
Aronson & Johnson & Ortiz	2,027,611
BlackRock Investment Management	178,213
Columbia Management	1,187,603
Lazard Asset Management	1,513,672
Martingale Asset Management	1,711,199
Westwood Management	3,152,350
Zevenbergen Capital	1,566,302
U.S. Public Equity Fees	16,480,206
Acadian Asset Management	1,379,063
Alliance Bernstein Institutional Management	1,588,981
Analytic Investors, LLC	1,469,072
AQR Capital Management	2,432,448
Arrowstreet Capital	9,241,058
BlackRock Investment Management	366,258
Coronation Asset Management (Proprietary) Limited	2,496,310
Invesco Advisers, Inc	633,658
MFS Institutional Advisors	4,062,064
Neon Capital Management	3,250,611
NISA Investment Advisors	119,597
The Rock Creek Group	3,406,373
Non-U.S. Public Equity Fees	30,445,493
Allianz	1,804,092
AQR Capital Management	758,758
BlackRock Investment Management	54,798
Chartwell Investment Partners	677,536
Columbus Circle	519,992
NISA Investment Advisors	109,706
RBC Global Asset Management	1,088,104
S-Cap Fees	5,012,986
Alpha Overlay Fees	40,622,991
Hedged Assets Fees	96,289,661
Private Real Estate Fees	53,546,129
Private Credit Fees	16,467,400
Private Equity Fees	228,167,794
Commission Recapture Income	(148,317)
Investment Management Expense	495,400,958
Custodial Services	
JP Morgan Chase, NA	1,577,462
Custodial Fees	1,577,462
Investment Consultants	
Albourne America, LLC	750,000
Institutional Shareholder Services, Inc.	74,500
Pathway Consulting	3,708,815
Towers Watson	243,100
Townsend	350,000
Verus Advisory Inc	225,000
Investment Consultant Fees	5,351,415
Legal Expenses	1,298,405
Staff Investment Expenses	4,077,004
Total Investment Expenses	$ 507,705,244

Serving Those who Serve our Students, Families and Communities

At PSRS/PEERS, our ongoing goals are:

1. To provide retirement security to Missouri's educators and education employees after a full career of service.
2. To help school districts attract and retain the best and brightest educators and employees for Missouri's school children.
3. To manage the Systems in a prudent and cost-efficient manner while continuing to provide exceptional service to our members.

Actuarial Section

Certification of Actuarial Results

November 9, 2018

Board of Trustees
Public School Retirement System of Missouri
Public Education Employee Retirement System of Missouri
3210 West Truman Boulevard
Jefferson City, MO 65109

Re: Certification of Actuarial Results as of June 30, 2018

Dear Members of the Board:

At your request, we have performed actuarial valuations of the Public School Retirement System ("PSRS") and the Public Education Employee Retirement System ("PEERS") of Missouri as of June 30, 2018. An actuarial valuation of each System is performed annually for purposes of preparing the required accounting information under Governmental Accounting Standards and for purposes of determining the Actuarial Determined Contribution under the Plan's funding policy. Our reports have been prepared pursuant to an engagement letter between PSRS and PEERS of Missouri and PwC, and are intended solely for the use and benefits of PSRS and PEERS of Missouri and not for reliance by any other person.

The actuarial valuations are based upon:

a. *Benefit Provisions* - Our understanding of the benefit provisions in effect on the valuation date under Missouri Revised Statutes Chapter 169.

b. *Data Relative to the Members of the Systems* - Data for all members of each System as of June 30, 2018 was provided by PSRS and PEERS of Missouri staff ("staff"). PwC relied on the data provided. PwC reviewed the data for reasonableness relative to the prior year's data, but the data was not audited.

c. *Assets of the Fund* - The values of the trust fund assets as of the valuation date for each System were also provided by the staff. An actuarial value of assets, with investment gains and losses relative to the assumed return recognized over five years, is used in the development of the contribution rates.

d. *Actuarial Cost Method* - The actuarial cost method utilized by each System for accounting purposes is the Entry Age Normal, Level Percent method, as required by GASB Statement No. 67. The system has elected to use the same cost method in the determination of the contribution rates for pre-funding the benefits. The objective of this method is to allocate the cost of benefits as a level percentage of pay over the entire career of each member. On a funding basis, any Unfunded Actuarial Accrued Liability ("UAAL") is separately financed as a level percentage of payroll over a fixed 30-year period, where a new 30-year amortization base is established for the gain or loss that occurred during the year prior to the valuation date.

e. *Actuarial Assumptions* - For the June 30, 2018 valuation, the actuarial assumptions were adopted by the Board pursuant to an experience study completed in June 2016. Since the last experience study, the investment return and COLA assumptions have been updated. For the June 30, 2017 valuations, the investment return assumption was lowered from 7.75% to 7.60% and the COLA assumption was increased based on changes to the Board's funding policy relating to COLAs. Both changes were adopted at the November 3, 2017 meeting. For the June 30, 2018 valuations, the investment return assumption was further lowered from 7.60% to 7.50%, as adopted by the Board at the October 29, 2018 meeting.

For accounting purposes, the actuarial assumptions and methods used in this valuation were selected and approved by the Board and are in accordance with our understanding of GASB Statement No. 67.

For funding purposes, the actuarial assumptions and methods were selected and approved by the Board and are consistent with the funding policy adopted by the Board and summarized below. In general, the methods provide orderly funding of all benefits being accrued, as well as funding of any Unfunded Actuarial Accrued Liability over a period of thirty years. The smoothing method employed in determining the Actuarial Value of Assets may accelerate or lengthen the effective funding period, depending on whether gains or losses are experienced. In our opinion, the actuarial assumptions and methods are reasonable for purposes of the actuarial valuations and meet the parameters set by the Actuarial Standards of Practice.

PricewaterhouseCoopers LLP, One North Wacker Drive Chicago, IL,60606 T: (312)298 2000, F: (312) 298 2001, www.pwc.com/us

Certification of Actuarial Results, continued

In order to establish long-term, consistent methods for pre-funding the benefits of each System, the Board of Trustees has adopted a funding policy. The objective is to achieve a funded ratio of 100% over a closed 30-year period. For this purpose, the funded ratio is defined as the Actuarial Value of Assets divided by the Actuarial Accrued Liability determined under the Entry Age Normal Level Percent cost method and the actuarial assumptions adopted by the Board.

The Board has identified the following principles to guide its funding policy:

1. Maintain adequate assets so that current plan assets plus future contributions and investment earnings should be sufficient to fund all benefits expected to be paid to members and their beneficiaries.
2. Maintain stability of contribution rates, consistent with other funding objectives.
3. Maintain public policy goals of accountability and transparency. Each policy element is clear in intent and effect, and each should allow an assessment of whether, how, and when the funding requirements of the plan will be met.
4. Promote intergenerational equity. Each generation of members and employers should incur the cost of benefits for the employees who provide services to them, rather than deferring those costs to future members and employers.
5. Provide a reasonable margin for adverse experience to help offset risks.
6. Review the investment earnings assumption in conjunction with the periodic asset / liability study and in consideration of the Board's risk profile.
7. Review demographic and economic assumptions in conjunction with the periodic experience study performed by an actuary.
8. Continue progress of systematic reduction of the Unfunded Actuarial Accrued Liabilities (UAAL) while keeping the member and employer contribution rates at or near 14.5% of pay for PSRS and 6.86% of pay for PEERS, the contribution rates first paid during 2011-2012.

The actuarially determined contribution rates developed from the June 30, 2018 valuations reflect these principles.

Trend data in the Financial Section and the following schedules and other data in this Actuarial Section are prepared by the staff with our guidance.

- Schedules of Funding Progress
- Required Contribution Rate and Amortization of Unfunded Liability
- Reconciliation of Unfunded Actuarial Accrued Liability
- Solvency Test
- Schedules of Active Member Valuation Data
- Schedules of Retirees and Beneficiaries Added to and Removed from Retirement Rolls

A range of results, different from those presented in this report could be considered reasonable. Future actuarial measurements may differ significantly from the current measurement presented in this report due to a number of factors including but not limited to: plan experience differing from that anticipated by the economic and demographic assumptions; increases or decreases expected as part of the natural operation of the methods used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); rounding conventions; and changes in plan provisions or applicable law. Due to the limited scope of this report, an analysis of the potential range of such future measurements has not been performed.

To the best of our knowledge, our actuarial reports are complete and accurate and have been prepared in accordance with generally accepted actuarial principles and practices and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. Our calculations also reflect our understanding of the requirements of Missouri state law. The undersigned actuaries are members of the Society of Actuaries and other professional organizations, including the American Academy of Actuaries, and meet the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States relating to pension plans. There is no relationship between the PwC practitioners involved in this engagement and PSRS and PEERS of Missouri that may impair our objectivity.

We certify that the information presented herein is accurate and fairly portrays the actuarial position of the Plans administered by PSRS and PEERS of Missouri as of June 30, 2018 based on the underlying census data, asset information and selected assumptions and methods.

Sincerely,

Cindy Fraterrigo

Cindy Fraterrigo, FSA, EA, MAAA
Principal

Brandon A. Robertson

Brandon Robertson, ASA, EA, MAAA
Director

Schedule of Funding Progress

Public School Retirement System of Missouri
(Dollar amounts in thousands)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL)- Entry Age (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a % of Covered Payroll ((b-a)/c)
6/30/09	$ 28,826,075	$ 36,060,121 [1]	$ 7,234,046	79.9%	$ 4,439,381	163.0%
6/30/10	28,931,331	37,233,602 [1]	8,302,271	77.7%	4,493,865	184.7%
6/30/11	29,387,486	34,383,430 [3]	4,995,944	85.5%	4,338,976	115.1%
6/30/12	29,013,002	35,588,030 [1]	6,575,028	81.5%	4,379,060	150.1%
6/30/13	29,443,147	36,758,165 [2]	7,315,018	80.1%	4,460,872	164.0%
6/30/14	31,846,599	38,483,184 [1]	6,636,585	82.8%	4,425,568	150.0%
6/30/15	34,073,415	40,610,540 [1]	6,537,125	83.9%	4,508,242	145.0%
6/30/16	35,419,278	41,744,619 [3]	6,325,341	84.8%	4,556,137	138.8%
6/30/17	37,373,740	44,501,771 [3]	7,128,031	84.0%	4,655,169	153.1%
6/30/18	39,211,452	46,702,002 [3]	7,409,550	84.0%	4,759,665	157.4%

[1] *There were no legislative changes in fiscal years 2009, 2010, 2012, 2014 and 2015.*

[2] *The extension of the 25-and-out and 2.55% provisions to 2014 are included in the AAL for 2013.*

[3] *There were no legislative changes in fiscal years 2011, 2016, 2017 and 2018, however actuarial assumptions were revised.*

Schedule of Funding Progress

Public Education Employee Retirement System of Missouri
(Dollar amounts in thousands)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL)- Entry Age (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a % of Covered Payroll ((b-a)/c)
6/30/09	$ 2,792,182	$ 3,458,044 [1]	$ 665,862	80.7%	$ 1,417,485	47.0%
6/30/10	2,892,411	3,658,713 [1]	766,302	79.1%	1,433,691	53.4%
6/30/11	3,028,757	3,549,348 [3]	520,591	85.3%	1,414,442	36.8%
6/30/12	3,090,880	3,746,347 [1]	655,467	82.5%	1,437,310	45.6%
6/30/13	3,237,200	3,967,619 [2]	730,419	81.6%	1,470,830	49.7%
6/30/14	3,584,719	4,211,489 [1]	626,770	85.1%	1,442,701	43.4%
6/30/15	3,915,199	4,512,317 [1]	597,118	86.8%	1,469,772	40.6%
6/30/16	4,157,427	4,809,666 [3]	652,239	86.4%	1,519,081	42.9%
6/30/17	4,470,270	5,209,369 [3]	739,099	85.8%	1,558,183	47.4%
6/30/18	4,774,781	5,542,478 [3]	767,697	86.1%	1,636,008	46.9%

[1] *There were no legislative changes in fiscal years 2009, 2010, 2012, 2014 and 2015.*

[2] *The extension of the 25-and-out provision is included in the AAL for 2013.*

[3] *There were no legislative changes in fiscal years 2011, 2016, 2017 and 2018, however actuarial assumptions were revised.*

Required Contribution Rate & Amortization of Unfunded Liability

Public School Retirement System of Missouri
For the fiscal year ended June 30, 2018

		Percentage of Payroll
(1)	Normal cost rate	17.44%
(2)	Rate needed to fund UAAL	10.65%
(3)	Benchmark contribution rate - normal cost plus a rate to fund the UAAL over 23.4 years	28.09%
(4)	Additional amount towards funding UAAL	0.91%
(5)	Recommended rate for FY 2020	29.00%

Required Contribution Rate & Amortization of Unfunded Liability

Public Education Employee Retirement System of Missouri
For the fiscal year ended June 30, 2018

		Percentage of Payroll
(1)	Normal cost rate	10.42%
(2)	Rate needed to fund UAAL	3.02%
(3)	Benchmark contribution rate - normal cost plus a rate to fund the UAAL over 23.6 years	13.44%
(4)	Additional amount towards funding UAAL	0.28%
(5)	Recommended rate for FY 2020	13.72%

Reconciliation of Unfunded Actuarial Accrued Liability

Public School Retirement System of Missouri
As of June 30, 2018

(1) Unfunded actuarial liability as of July 1, 2017		$ 7,128,031,672
(2) Changes in Unfunded Actuarial Accrued Liability		
a. Impact of Plan Changes	-	
b. Actuarial (Gains)/Losses		
i. From investment	(303,475,391)	
ii. From actuarial liabilities due to assumption changes	531,202,248	
iii. From actuarial liabilities due to actual vs. expected COLA	196,774,779	
iv. From actuarial liabilities due to actual vs. expected salary changes	(156,178,088)	
v. From actuarial liabilities due to other demographic experience	66,775,951	
vi. Total Unfunded Actuarial Accrued Liability (Gain)/Loss		335,099,499
c. Total New Amortization Bases: (2)(a) + (2)(b)(vi)		335,099,499
d. Net Change in Existing Bases Due to Prior Year Contributions, Net of Interest		27,418,213
e. Total changes in Unfunded Actuarial Accrued Liability		362,517,712
(3) Unfunded Actuarial Accrued Liability as of June 30, 2018		$ 7,490,549,384

Reconciliation of Unfunded Actuarial Accrued Liability

Public Education Employee Retirement System of Missouri
As of June 30, 2018

(1) Unfunded actuarial liability as of July 1, 2017		$ 739,098,952
(2) Changes in Unfunded Actuarial Accrued Liability		
a. Impact of Plan Changes	-	
b. Actuarial (Gains)/Losses		
i. From investment	(32,136,161)	
ii. From actuarial liabilities due to assumption changes	61,921,295	
iii. From actuarial liabilities due to actual vs. expected COLA	14,846,798	
iv. From actuarial liabilities due to actual vs. expected salary changes	(24,061,673)	
v. From actuarial liabilities due to other demographic experience	2,479,319	
vi. Total Unfunded Actuarial Accrued Liability (Gain)/Loss		23,049,578
c. Total New Amortization Bases: (2)(a) + (2)(b)(vi)		23,049,578
d. Net Change in Existing Bases Due to Prior Year Contributions, Net of Interest		5,547,893
e. Total changes in Unfunded Actuarial Accrued Liability		28,597,471
(3) Unfunded Actuarial Accrued Liability as of June 30, 2018		$ 767,696,423

Schedule of Active Member Valuation Data

Public School Retirement System of Missouri

Actuarial Valuation Date	Number of Employers	Number of Members	Covered Annual Payroll (000's)	Average Annual Salary	% Increase in Average Salary	Average Attained Age	Average Years of Service
6/30/09	540	79,335	$ 4,439,381	$ 55,957	4.3%	42.2	11.1
6/30/10	538	79,256	4,493,865	56,701	1.3%	42.3	11.3
6/30/11	537	77,708	4,338,976	55,837	-1.5%	42.3	11.5
6/30/12	537	77,529	4,379,060	56,483	1.2%	42.2	11.4
6/30/13	535	78,076	4,460,872	57,135	1.2%	42.1	11.4
6/30/14	535	75,168	4,425,568	58,876	3.0%	42.2	11.8
6/30/15	535	78,138	4,508,242	58,582	-0.5%	42.0	11.5
6/30/16	534	78,129	4,556,137	59,005	0.7%	42.0	11.6
6/30/17	534	78,274	4,655,169	60,643	2.8%	42.0	11.7
6/30/18	533	78,700	4,759,665	61,634	1.6%	42.1	11.8

Schedule of Active Member Valuation Data

Public Education Employee Retirement System of Missouri

Actuarial Valuation Date	Number of Employers	Number of Members	Covered Annual Payroll (000's)	Average Annual Salary	% Increase in Average Salary	Average Attained Age	Average Years of Service
6/30/09	535	51,234	$ 1,417,485	$ 27,667	2.2%	47.1	7.7
6/30/10	535	50,363	1,433,691	28,467	2.9%	47.5	8.0
6/30/11	534	48,800	1,414,442	28,984	1.8%	47.9	8.3
6/30/12	534	48,605	1,437,310	29,571	2.0%	48.1	8.4
6/30/13	532	48,709	1,470,830	30,196	2.1%	48.1	8.5
6/30/14	532	45,589	1,442,701	31,646	4.8%	48.6	8.9
6/30/15	532	46,864	1,469,772	32,220	1.8%	48.4	8.6
6/30/16	530	47,851	1,519,081	32,887	2.1%	48.3	8.6
6/30/17	530	47,953	1,558,183	33,643	2.3%	48.3	8.5
6/30/18	530	48,549	1,636,008	34,361	2.1%	48.2	8.4

Solvency Test

Public School Retirement System of Missouri
(Dollar amounts in thousands)

Actuarial Valuation Date	Actuarial Accrued Liability for: Member Contributions (1)	Current Retirees & Beneficiaries (2)	Active & Inactive Members Employer Financed Portion (3)	Actuarial Value of Assets	Percentage of Actuarial Liabilities Covered by Actuarial Value of Assets for: (1)	(2)	(3)
6/30/09	$ 6,299,067	$ 19,745,129	$10,015,925	$ 28,826,075	100.0%	100.0%	27.8%
6/30/10	6,506,803	20,532,011	10,194,788	28,931,331	100.0%	100.0%	18.6%
6/30/11	6,571,916	20,023,701	7,787,813	29,387,486	100.0%	100.0%	35.8%
6/30/12	6,687,358	21,191,032	7,709,641	29,013,002	100.0%	100.0%	14.7%
6/30/13	6,856,920	22,328,795	7,572,451	29,443,147	100.0%	100.0%	3.4%
6/30/14	6,985,665	23,579,998	7,917,522	31,846,599	100.0%	100.0%	16.2%
6/30/15	6,787,038	24,674,171	9,149,331	34,073,415	100.0%	100.0%	28.6%
6/30/16	6,994,370	25,895,012	8,855,237	35,419,278	100.0%	100.0%	28.6%
6/30/17	7,267,682	27,544,082	9,690,007	37,373,740	100.0%	100.0%	26.4%
6/30/18	7,593,869	28,811,151	10,296,982	39,211,452	100.0%	100.0%	27.3%

Solvency Test

Public Education Employee Retirement System of Missouri
(Dollar amounts in thousands)

Actuarial Valuation Date	Actuarial Accrued Liability for: Member Contributions (1)	Current Retirees & Beneficiaries (2)	Active & Inactive Members Employer Financed Portion (3)	Actuarial Value of Assets	Percentage of Actuarial Liabilities Covered by Net Assets for: (1)	(2)	(3)
6/30/09	$ 693,962	$1,305,025	$ 1,459,057	$ 2,792,182	100.0%	100.0%	54.4%
6/30/10	743,146	1,392,753	1,522,813	2,892,411	100.0%	100.0%	49.7%
6/30/11	783,112	1,398,620	1,367,616	3,028,757	100.0%	100.0%	61.9%
6/30/12	822,485	1,541,541	1,382,321	3,090,880	100.0%	100.0%	52.6%
6/30/13	862,035	1,653,613	1,451,971	3,237,200	100.0%	100.0%	49.7%
6/30/14	894,650	1,861,575	1,455,264	3,584,719	100.0%	100.0%	56.9%
6/30/15	892,547	2,040,647	1,579,123	3,915,199	100.0%	100.0%	62.2%
6/30/16	926,274	2,205,328	1,678,064	4,157,427	100.0%	100.0%	61.1%
6/30/17	962,156	2,453,877	1,793,336	4,470,270	100.0%	100.0%	58.8%
6/30/18	1,004,383	2,678,124	1,859,971	4,774,781	100.0%	100.0%	58.7%

PSRS Schedule of Retirees and Beneficiaries Added to and Removed from Retirement Rolls

	Added to Rolls		Removed from Rolls		Rolls End of Year			% Increase	
	Number	Annual Allowances	Number	Annual Allowances	Number	Annual Allowances	Average Annual Allowances	in Annual Allowance	in Average Annual Allowance
2017-2018									
Service Retirees	2,406	$ 90,851,701	1,105	$ 41,389,599	55,930	$ 2,362,271,747	$ 42,236	3.78 %	1.36 %
Disability Retirees	50	1,448,148	38	952,179	991	27,406,384	27,655	3.09	2.05
Beneficiaries	405	13,902,271	202	5,519,407	4,374	134,644,480	30,783	7.72	2.50
Note: As noted on page 128, other adjustments to 2 disability retirees and 9 beneficiaries occurred during the current year.									
2016-2017									
Service Retirees	2,601	$ 97,816,017	1,042	$ 36,450,990	54,629	$ 2,276,325,975	$ 41,669	2.73 %	-0.21 %
Disability Retirees	56	1,525,607	30	585,716	981	26,584,277	27,099	2.83	0.31
Beneficiaries	345	2,304,287	203	5,520,642	4,162	124,990,237	30,031	6.00	1.72
Note: Other adjustments to 1 service retiree, 2 disability retirees and 26 beneficiaries occurred during the 2016-2017 fiscal year.									
2015-2016									
Service Retirees	2,603	$ 94,495,423	883	$ 30,442,764	53,069	$ 2,215,921,481	$ 41,755	5.03 %	1.62 %
Disability Retirees	83	2,292,574	23	524,458	957	25,852,085	27,014	9.35	1.92
Beneficiaries	311	9,947,411	190	4,077,020	3,994	117,916,972	29,524	6.53	3.60
Note: Other adjustments to 4 service retirees, 5 disability retirees and 11 beneficiaries occurred during the 2015-2016 fiscal year.									
2014-2015									
Service Retirees	2,571	$ 92,740,440	933	$ 30,965,898	51,345	$ 2,109,756,890	$ 41,090	5.07 %	1.61 %
Disability Retirees	74	2,034,400	41	909,636	892	23,641,506	26,504	6.55	2.25
Beneficiaries	351	10,810,471	387	4,706,760	3,884	110,685,031	28,498	7.82	7.48
Note: Effective June 30, 2015, retirees and beneficiaries with their benefits on hold are included in the payment rolls at year-end.									
2013-2014									
Service Retirees	2,906	$ 110,291,762	848	$ 27,701,354	49,652	$ 2,007,864,810	$ 40,439	6.31 %	1.91 %
Disability Retirees	59	1,461,178	45	827,024	856	22,188,843	25,922	3.82	2.12
Beneficiaries	303	9,030,545	186	3,874,901	3,872	102,660,521	26,514	6.72	3.50
Note: 106 retirees and beneficiaries had their benefit on hold at June 30, 2014 and are not included in the payment rolls at the end of the year.									
2012-2013									
Service Retirees	2,659	$ 98,663,536	907	$ 27,431,830	47,594	$ 1,888,628,855	$ 39,682	5.92 %	2.02 %
Disability Retirees	69	1,808,376	28	627,785	842	21,372,682	25,383	7.58	2.33
Beneficiaries	376	9,380,442	185	3,088,202	3,755	96,196,708	25,618	8.55	3.02
Note: 115 retirees and beneficiaries had their benefit on hold at June 30, 2013 and are not included in the payment rolls at the end of the year.									

PEERS Schedule of Retirees and Beneficiaries Added to and Removed from Retirement Rolls

	Added to Rolls		Removed from Rolls		Rolls End of Year			% Increase	
	Number	Annual Allowances	Number	Annual Allowances	Number	Annual Allowances	Average Annual Allowances	in Annual Allowance	in Average Annual Allowance
2017-2018									
Service Retirees	2,025	$ 23,443,109	788	$ 5,183,020	27,575	$ 248,707,170	$ 9,019	7.93 %	3.07 %
Disability Retirees	36	219,230	27	179,121	813	4,484,799	5,516	2.19	1.06
Beneficiaries	206	1,426,667	92	482,533	1,972	12,090,177	6,131	10.00	3.92
Note: As noted on page 129, other adjustments to 3 service retirees and 5 beneficiaries occurred during the current year.									
2016-2017									
Service Retirees	2,023	$ 23,078,805	752	$ 4,631,306	26,335	$ 230,438,067	$ 8,750	7.36 %	2.16 %
Disability Retirees	46	313,598	23	109,268	804	4,388,588	5,458	4.54	1.68
Beneficiaries	207	1,335,560	88	451,434	1,863	10,991,043	5,900	8.14	1.01
Note: Other adjustments to 3 service retirees, 1 disability retiree and 4 beneficiaries occurred during the 2016-2017 fiscal year.									
2015-2016									
Service Retirees	1,903	$ 20,486,168	746	$ 4,299,969	25,061	$ 214,643,511	$ 8,565	8.59 %	3.57 %
Disability Retirees	53	333,484	31	149,572	782	4,198,147	5,368	5.38	3.35
Beneficiaries	192	1,254,525	90	413,164	1,740	10,163,757	5,841	11.60	4.60
Note: Other adjustments to 4 service retirees, 7 disability retirees and 7 beneficiaries occurred during the 2015-2016 fiscal year.									
2014-2015									
Service Retirees	1,886	$ 20,303,553	742	$ 4,999,606	23,900	$ 197,661,001	$ 8,270	9.23 %	3.62 %
Disability Retirees	62	373,039	30	183,496	767	3,983,823	5,194	7.38	2.49
Beneficiaries	171	1,199,171	78	371,236	1,631	9,107,407	5,584	11.51	5.08
Note: Effective June 30, 2015, retirees and beneficiaries with their benefits on hold are included in the payment rolls at year-end.									
2013-2014									
Service Retirees	1,943	$ 20,062,595	704	$ 3,843,918	22,673	$ 180,951,822	$ 7,981	10.14 %	4.12 %
Disability Retirees	66	360,139	39	195,300	732	3,710,104	5,068	6.19	2.26
Beneficiaries	165	911,764	71	263,425	1,537	8,167,504	5,314	9.61	2.90
Note: 87 retirees and beneficiaries had their benefit on hold at June 30, 2014 and are not included in the payment rolls at the end of the year.									
2012-2013									
Service Retirees	1,674	$ 16,712,855	694	$ 4,168,985	21,434	$ 164,297,318	$ 7,665	8.23 %	3.27 %
Disability Retirees	69	408,169	29	158,081	705	3,493,840	4,956	9.21	3.01
Beneficiaries	164	1,155,936	77	357,536	1,443	7,451,611	5,164	13.14	6.32
Note: 92 retirees and beneficiaries had their benefit on hold at June 30, 2013 and are not included in the payment rolls at the end of the year.									

PSRS Summary Plan Description

The Public School Retirement System of Missouri (PSRS) became operative July 1, 1946. It was established by an Act of the Missouri Legislature and is governed by Chapter 169 of the Revised Statutes of Missouri. Its purpose is to provide benefits to members and their dependents at retirement or in the event of death or disability prior to retirement.

PSRS is a defined benefit plan funded on an actuarial reserve basis, which establishes the availability of funds to pay benefits as prescribed by law. The System is established as an independent trust fund and is not subject to direction by any state agency. Administrative expenses are paid entirely out of investment earnings.

Administration – The administration of PSRS is vested in a seven-member Board of Trustees, composed of three elected PSRS members, one elected Public Education Employee Retirement System of Missouri (PEERS) member, and three appointed trustees. The four elected trustees are selected by vote of the members and retirees of both Systems. Two are elected each even-numbered calendar year to serve four-year terms. The three appointed trustees, one of whom must be a PSRS or a PEERS retiree, are named by the governor to serve four-year terms. The appointed trustees must be residents of school districts included in the System but not employees of such districts nor state employees nor state elected officials.

The Board appoints an executive director who is responsible for employment of the retirement office staff, routine operation of the System, and acts as an advisor to the Board on all matters pertaining to the System.

Member Participation – PSRS membership is automatic for certificated, full-time employees of public school districts in Missouri (except the St. Louis city and the Kansas City school districts), public two-year colleges in Missouri, PSRS and certain statewide non-profit educational associations that have previously elected to join. Non-profit educational associations are no longer allowed to join the System. Certificated, part-time employees whose services would qualify them for membership in PEERS are contributing members of PSRS unless PEERS membership is elected. The vast majority of PSRS members are not covered by Social Security. However, there are a few exceptions due to specific guidance from the Social Security Administration. Those members who are also covered by Social Security contribute to PSRS at two-thirds the rate of other members and receive two-thirds benefits.

Members working in covered employment are considered active members. Such members contribute 14.5% of total retirement salary to PSRS. The contributions are deducted and remitted by the employer and are credited by PSRS to individual member accounts. Since July 1, 1989, member contributions have been tax-deferred for federal and state income tax purposes under IRS 414(h)(2). Contributions are not considered income for such purposes until they are paid as a lump-sum refund or monthly benefits.

Interest at a rate set each year by the Board of Trustees is credited to individual member accounts each June 30 on the previous June 30 balance. The interest rate set annually by the board, was 2.0% on June 30, 2018. Since PSRS is a defined benefit plan, benefits are based upon the member's final average salary and years of service. The amount of interest credited to a member's account has no bearing on the monthly benefit amount payable at retirement.

In addition to service earned for covered employment, members may purchase service in various categories including several types of leave, out-of-state school service, other public and private employment, active U.S. military duty, and service under the federal Uniformed Services Employment and Re-Employment Rights Act of 1994 (USERRA).

Members who have contributions on deposit with PSRS but are not working in covered employment are considered inactive members.

Employer Participation – The employers served by PSRS withhold members' contributions from salary payments and contribute an amount equal to those contributions at a current rate of 14.5% of payroll. Employer contributions and investment earnings on those funds are placed by PSRS in a general reserve account to pay monthly benefits to retirees and to beneficiaries of deceased members. Employers are responsible for remitting contributions promptly and for furnishing contribution information and new membership information to PSRS. Employers also provide needed data when members apply for monthly benefits or for refunds upon termination of employment.

Survivor Benefits – The designated beneficiary of a member who dies before retirement is eligible for a lump-sum refund of the member's contributions and interest. If the beneficiary is an eligible dependent and the member dies while in covered employment with at least two years of service, or while eligible for disability retirement benefits, monthly survivor benefits based on a percentage of the member's salary for the last full year of covered service can be elected instead of a lump-sum refund. Monthly survivor benefits may also be payable to qualified dependents of an inactive member who has at least five years of service.

In lieu of a lump-sum refund or monthly survivor benefits, survivors with an insurable interest and beneficiaries of disability retirees may elect to receive monthly benefits under the Joint-and-Survivor 100% benefit plan. Such benefits are payable when the member would have been eligible for early or normal service retirement.

Refund of Contributions – Member contributions and interest are fully refundable upon termination of covered employment or death. All service and benefit rights are forfeited upon voluntary refund or automatic termination of membership.

A member may, upon returning to covered employment, reinstate the service forfeited through termination of a previous membership by repaying the money refunded plus interest.

Membership Termination – Membership is terminated by death, retirement, refund of contributions or absence from covered employment by a non-vested member for five consecutive school years.

Disability Retirement Benefits – Disability retirement benefits are payable to eligible members who have met service and eligibility requirements and who, because of permanent disability, are unable to earn a livelihood in any occupation. In most instances, the disability retirement benefit is calculated at 50% of the member's salary for the last full year of service.

Service Retirement Benefits – Service retirement benefits are payable to members who have terminated covered employment and have met certain eligibility requirements.

Benefit Formula – All service retirement benefits are based on a formula which multiplies final average salary by the applicable benefit factor, by the years of service and, in the case of early retirement, by an age-reduction factor. Final average salary is obtained by dividing the total salaries for the three highest consecutive years of service by 36 months to arrive at a monthly average; the applicable factor is determined by the type of retirement eligibility; total service is the amount accumulated at retirement for covered employment and purchased service; and the age-reduction factor, when applicable, is determined by the age at retirement.

Normal Retirement – A member may retire with benefits calculated under the standard (2.5%) benefit factor at age 60 with five years of service, at any age with 30 years of service, or when a combination of age and service equals 80 or more. Between July 1, 2001 and July 1, 2014, a member could retire with a 2.55% benefit factor with 31 or more years of service.

Early Retirement – A member may retire with benefits calculated under the standard (2.5%) formula with an age-reduction factor applied, at age 55 with five years of service or at any age with 25 years of service, as long as he or she does not qualify for Rule of 80.

A special provision allows members under age 55 with 25.0 to 29.9 years of service to retire with benefits calculated under a modified benefit factor ranging from 2.2% to 2.4% with no age-reduction factor applied.

Payment Options – A retiring member may choose to receive the maximum benefits payable under the Single Life benefit plan, or may elect to receive a reduced benefit under one of three Joint-and-Survivor benefit plans or under one of two Term-Certain benefit plans, to provide survivor benefit coverage in varying degrees after the retiree's death.

Certain benefit minimums apply to normal or early retirement with 15 or more years of service. The minimums for 15 but fewer than 25 years of service are reduced if a Joint-and-Survivor or a Term-Certain benefit plan is elected and/or if an age-reduction factor is applicable because of early retirement. The minimums for 25 or more years of service are reduced only if a Joint-and-Survivor or a Term-Certain benefit plan is selected.

The Partial Lump Sum Option (PLSO) is available to qualified members. This option allows qualified members to choose to have their lifetime monthly benefits actuarially reduced in exchange for the right to also receive a one-time, lump-sum payment at retirement.

Cost-of-Living Adjustments – Cost-of-living adjustments (COLAs) are provided beginning the second January after retirement to service and disability retirees, and to Joint-and-Survivor and Term-Certain beneficiaries of deceased retirees. Lifetime COLAs are limited to 80% of the original retirement benefit.

The Department of Labor Consumer Price Index for Urban Consumers (CPI-U) for the previous fiscal year is used as a guideline for the annual COLA which is set by the Board. By law, if the change in CPI-U is 2% or more, the COLA must be at least 2%, but no more than 5%. If the change in CPI-U is between 0% and 2%, the Board may grant a COLA of 0% to 5%. If the change in CPI-U is less than 0%, no increase can be given. If it is more than 5%, the Board is required to give a 5% increase. Under the funding policies adopted by the Board in November 2017. The following applies:

- If the June to June change in the CPI-U is less than 2% for consecutive one-year periods, a cost-of-living increase of 2% will be granted when the cumulative increase is equal to or greater than 2%, at which point the cumulative increase in the CPI-U will be reset to be based on the June value immediately preceding the January 1 at which the 2% cost-of-living increase is granted.
- If the June to June change in the CPI-U is greater than or equal to 2%, but less than 5%, a cost-of-living increase of 2% will be granted.
- If the June to June change in the CPI-U is greater than or equal to 5%, a cost-of-living increase of 5% will be granted.

Member Handbook – A ***Member Handbook*** containing detailed information concerning the retirement program is available on our website or can be obtained from the retirement office upon request.

PEERS Summary Plan Description

The Public Education Employee Retirement System of Missouri (PEERS) was established by an Act of the Missouri Legislature to begin operations on November 1, 1965, and is governed by Chapter 169 of the Revised Statutes of Missouri. Its purpose is to provide benefits to members and their dependents at retirement or in the event of death or disability prior to retirement.

PEERS is a defined benefit plan funded on an actuarial reserve basis, which establishes the availability of funds to pay benefits as prescribed by law. The System is established as an independent trust fund and is not subject to direction by any state agency. Administrative expenses are paid entirely out of investment earnings.

Administration – The law provides that the responsibility for the operation and administration of the retirement system is vested in the Public School Retirement System of Missouri (PSRS) Board of Trustees sitting as the Board of Trustees for PEERS. The Board is comprised of three elected PSRS members, one elected PEERS member and three appointed trustees. The four elected trustees are selected by vote of the members and retirees of both Systems. Two are elected each even-numbered calendar year to serve four-year terms. The three appointed trustees, one of whom must be a PSRS or a PEERS retiree, are named by the governor to serve four-year terms. The appointed trustees must be residents of school districts included in the System but not employees of such districts nor state employees nor state elected officials.

The Board appoints an executive director who is responsible for employment of the retirement office staff, routine operation of the System, and acts as an advisor to the Board on all matters pertaining to the System.

Member Participation – PEERS membership is automatic, regardless of position, for all persons not covered by PSRS who are employed for 20 or more hours a week on a regular basis in a position that normally requires at least 600 hours during the school term by the public school districts in Missouri (except the St. Louis city and the Kansas City school districts), public two-year colleges in Missouri (except St. Louis Community College), PSRS and statewide non-profit educational associations that have elected to join.

Members working in covered employment are considered active members. Such members contribute 6.86% of their total retirement salary to PEERS. The contributions are deducted by the employer and are credited by PEERS to individual member accounts. PEERS members are also covered by Social Security.

PEERS membership can be elected by employees with Missouri educator certificates who work in any position for 17 or more hours weekly but less than full time; however, PSRS membership is automatic if a PEERS election is not made. The election to join PEERS must be filed with the Board within 90 days after entering first time, part-time employment.

Since July 1, 1989, member contributions have been tax-deferred for federal and state income tax purposes under IRC 414(h)(2). Contributions are not considered as income for federal or state income tax purposes until they are paid in a lump-sum refund or in monthly benefits.

Individual accounts are maintained for all PEERS members. Interest is credited each June 30 on the previous June 30 balance. The interest rate, set annually by the Board, was 2.0% on June 30, 2018. Since PEERS is a defined benefit plan, benefits are based upon the member's final average salary and years of service. The amount of interest credited to a member's account has no bearing on the monthly benefit amount payable at retirement.

In addition to service earned for covered employment, members may purchase service in various categories including several types of leave, out-of-state school service, other public and private employment, active U.S. military duty, and service under the federal Uniformed Services Employment and Re-employment Rights Act of 1994 (USERRA).

Members who have contributions on deposit with PEERS but are not currently working in covered employment are considered inactive members.

Employer Participation – The employers served by PEERS withhold members' contributions from salary payments and contribute an amount equal to employee contributions at a current rate of 6.86% of payroll. Employer contributions and investment earnings on those funds are placed in a general reserve account to pay monthly benefits to retirees and to beneficiaries of deceased members. It is the responsibility of the employers to remit contributions promptly and for furnishing contribution information and new membership information to PEERS. Employers also provide needed data when members apply for benefits or refund of contributions upon termination of employment.

Survivor Benefits – When a member dies before retirement, the designated beneficiary becomes eligible for a lump-sum refund of the employee's contributions and interest. In lieu of a lump-sum refund, survivors with an insurable interest and beneficiaries of disability retirees may elect to receive monthly benefits under the Joint-and-Survivor 100% benefit plan. Such benefits are payable when the member would have been eligible for early or normal service retirement.

Refund of Contributions – Member contributions and interest are fully refundable upon termination of covered employment or death. All service and benefit rights are forfeited upon voluntary refund or automatic termination of membership.

A member may, upon returning to covered employment, reinstate the service forfeited through termination of a previous membership by repaying the money refunded plus interest.

Membership Termination – Membership is terminated by death, retirement, refund of contributions or absence from covered employment by a non-vested member for five consecutive school years.

Disability Retirement Benefits – Disability retirement benefits are payable to members who have met service and eligibility requirements and who, because of permanent disability, are unable to earn a livelihood in any occupation. The disability retirement benefit is calculated at 90% of the normal service retirement benefit.

Service Retirement Benefits – Service retirement benefits are payable to members who have terminated covered employment and who have met certain eligibility requirements.

Benefit Formula – All service retirement benefits are based on a formula which multiplies final average salary by the applicable benefit factor, by the years of service and, in the case of early retirement, by an age-reduction factor. Final average salary is obtained by dividing the total salaries for the three highest consecutive years of service by 36 months to arrive at a monthly average; the applicable factor is determined by the type of retirement eligibility; total service is the amount accumulated at retirement for covered employment and purchased service; and the age-reduction factor, when applicable, is determined by the age at retirement.

Because of the conversion of the System from a formula integrated with Social Security to the present basis, a special "frozen benefit" is in effect for certain members for service prior to July 1, 1973.

Normal Retirement – A member may retire with benefits calculated under the standard (1.61%) formula at age 60 with five years of service, at any age with at least 30 years of service, and at the point where the member's age plus service equals 80 or more (Rule of 80). A member may retire under the standard (1.61%) formula when the member qualifies for Rule of 80 or 30-and-Out and will receive an additional .8% multiplier until reaching minimum eligibility age for Social Security benefits (currently age 62).

Early Retirement – A member may retire with benefits calculated under the standard (1.61%) formula with an age-reduction factor applied at age 55 with five years of service, or at any age with 25 years of service, as long as he or she does not qualify for Rule of 80.

A special provision allows members under age 55 with 25.0 to 29.9 years of service to retire with benefits calculated under a modified benefit factor ranging from 1.51% to 1.59% with no age-reduction factor applied.

Payment Options – A retiring member may choose to receive the maximum benefits payable under the Single Life benefit plan, or may choose to receive a reduced benefit under one of three Joint-and-Survivor benefit plans or under one of two Term-Certain benefit plans, to provide survivor benefit coverage in varying degrees after the retiree's death.

Another option, the Accelerated Payment Plan (APP), allows members to receive a higher PEERS benefit prior to minimum Social Security eligibility age (currently age 62). When the minimum Social Security eligibility age is attained, the member's PEERS benefit is reduced and remains at a reduced level for the remainder of their retirement.

The Partial Lump Sum Option (PLSO) is available to qualified members. This option allows qualified members to choose to have their lifetime monthly benefits actuarially reduced in exchange for the right to also receive a one-time, lump-sum payment at retirement.

Cost-of-Living Adjustments – Cost-of-living adjustments (COLAs) are provided starting the fourth January after retirement to service and disability retirees, and to Joint-and-Survivor and Term-Certain beneficiaries of deceased retirees. Lifetime COLAs are limited to 80% of the original retirement benefit.

The Department of Labor Consumer Price Index for Urban Consumers (CPI-U) for the previous fiscal year is used as a guideline for the annual COLA which is set by the Board of Trustees. By law, if the change in CPI-U is 2% or more, the COLA must be at least 2%, but no more than 5%. If the change in CPI-U is between 0% and 2%, the Board may grant a COLA of 0% to 5%. If the change in CPI-U is less than 0%, no increase can be given. If it is more than 5%, the Board is required to give a 5% increase. Under the funding policies adopted by the Board in November 2017. The following applies:

- If the June to June change in the CPI-U is less than 2% for consecutive one-year periods, a cost-of-living increase of 2% will be granted when the cumulative increase is equal to or greater than 2%, at which point the cumulative increase in the CPI-U will be reset to be based on the June value immediately preceding the January 1 at which the 2% cost-of-living increase is granted.
- If the June to June change in the CPI-U is greater than or equal to 2%, but less than 5%, a cost-of-living increase of 2% will be granted.
- If the June to June change in the CPI-U is greater than or equal to 5%, a cost-of-living increase of 5% will be granted.

Member Handbook – A ***Member Handbook*** containing detailed information concerning the retirement program is available on our website or can be obtained from the retirement office upon request.

PSRS and PEERS Summary of Actuarial Assumptions and Methods

The Board is responsible for the adoption of the Systems' Funding Policies and assumptions. A summary of the current Funding Policy is included in the Certification of Actuarial Results.

The actuarial assumptions and methods utilized for funding and financial report purposes differ slightly. The primary difference between the two methods is the fact that financial reporting requires the recognition of investment gains at market with no smoothing.

Inflation

Inflation is assumed to be 2.25% per annum (effective 6/30/16).

Payroll Growth

Total payroll growth for PSRS is assumed to be 2.75% per annum, consisting of 2.25% inflation, 0.25% real wage growth due to the inclusion of active health care costs in pension earnings, and 0.25% of real wage growth due to productivity (effective 6/30/16).

Total payroll growth for PEERS assumed to be 3.25% per annum, consisting of 2.25% inflation, 0.50% real wage growth due to the inclusion of active health care costs in pension earnings, and 0.50% of real wage growth due to productivity (effective 6/30/16).

Individual Salary Growth

PSRS

Individual salaries for PSRS are assumed to increase each year with inflation of 2.25%, real wage growth generated by the cost of active health care of 0.25% (since health care costs are included in pension earnings), real wage growth due to productivity of 0.25%, and additional real salary growth for merit, promotion, and seniority (effective 6/30/16).

PSRS – Real Salary Growth

Service	Inflation	Health Care Cost	Productivity	Merit, Promotion, Seniority	Total Individual Salary Growth
0	2.25%	0.25%	0.25%	6.75%	9.50%
1	2.25%	0.25%	0.25%	3.25%	6.00%
2	2.25%	0.25%	0.25%	3.10%	5.85%
3	2.25%	0.25%	0.25%	2.95%	5.70%
4	2.25%	0.25%	0.25%	2.80%	5.55%
5	2.25%	0.25%	0.25%	2.65%	5.40%
6	2.25%	0.25%	0.25%	2.50%	5.25%
7	2.25%	0.25%	0.25%	2.35%	5.10%
8	2.25%	0.25%	0.25%	2.20%	4.95%
9	2.25%	0.25%	0.25%	2.05%	4.80%
10	2.25%	0.25%	0.25%	1.90%	4.65%
11	2.25%	0.25%	0.25%	1.75%	4.50%
12	2.25%	0.25%	0.25%	1.60%	4.35%
13	2.25%	0.25%	0.25%	1.45%	4.20%
14	2.25%	0.25%	0.25%	1.30%	4.05%
15	2.25%	0.25%	0.25%	1.23%	3.98%
16	2.25%	0.25%	0.25%	1.16%	3.91%
17	2.25%	0.25%	0.25%	1.09%	3.84%
18	2.25%	0.25%	0.25%	1.02%	3.77%
19	2.25%	0.25%	0.25%	0.95%	3.70%
20	2.25%	0.25%	0.25%	0.88%	3.63%
21	2.25%	0.25%	0.25%	0.81%	3.56%
22	2.25%	0.25%	0.25%	0.74%	3.49%
23	2.25%	0.25%	0.25%	0.67%	3.42%
24	2.25%	0.25%	0.25%	0.60%	3.35%
25	2.25%	0.25%	0.25%	0.53%	3.28%
26	2.25%	0.25%	0.25%	0.46%	3.21%
27	2.25%	0.25%	0.25%	0.39%	3.14%
28	2.25%	0.25%	0.25%	0.32%	3.07%
29	2.25%	0.25%	0.25%	0.25%	3.00%
>=30	2.25%	0.25%	0.25%	0.25%	3.00%

PEERS

Individual salaries for PEERS are assumed to increase each year with inflation of 2.25%, real wage growth generated by the cost of active health care of 0.50% (since health care costs are included in pension earnings), real wage growth due to productivity of 0.50%, and additional real salary growth for merit, promotion, and seniority (effective 6/30/16).

PEERS – Real Salary Growth

Service	Inflation	Health Care Cost	Productivity	Merit, Promotion, Seniority	Total Individual Salary Growth
0	2.25%	0.50%	0.50%	7.75%	11.00%
1	2.25%	0.50%	0.50%	3.00%	6.25%
2	2.25%	0.50%	0.50%	2.50%	5.75%
3	2.25%	0.50%	0.50%	2.25%	5.50%
4	2.25%	0.50%	0.50%	2.00%	5.25%
5	2.25%	0.50%	0.50%	1.90%	5.15%
6	2.25%	0.50%	0.50%	1.80%	5.05%
7	2.25%	0.50%	0.50%	1.70%	4.95%
8	2.25%	0.50%	0.50%	1.60%	4.85%
9	2.25%	0.50%	0.50%	1.50%	4.75%
10	2.25%	0.50%	0.50%	1.40%	4.65%
11	2.25%	0.50%	0.50%	1.30%	4.55%
12	2.25%	0.50%	0.50%	1.20%	4.45%
13	2.25%	0.50%	0.50%	1.10%	4.35%
14	2.25%	0.50%	0.50%	1.00%	4.25%
15	2.25%	0.50%	0.50%	0.95%	4.20%
16	2.25%	0.50%	0.50%	0.90%	4.15%
17	2.25%	0.50%	0.50%	0.85%	4.10%
18	2.25%	0.50%	0.50%	0.80%	4.05%
19	2.25%	0.50%	0.50%	0.75%	4.00%
20	2.25%	0.50%	0.50%	0.75%	4.00%
21	2.25%	0.50%	0.50%	0.75%	4.00%
22	2.25%	0.50%	0.50%	0.75%	4.00%
23	2.25%	0.50%	0.50%	0.75%	4.00%
24	2.25%	0.50%	0.50%	0.75%	4.00%
25	2.25%	0.50%	0.50%	0.75%	4.00%
26	2.25%	0.50%	0.50%	0.75%	4.00%
27	2.25%	0.50%	0.50%	0.75%	4.00%
28	2.25%	0.50%	0.50%	0.75%	4.00%
29	2.25%	0.50%	0.50%	0.75%	4.00%
>=30	2.25%	0.50%	0.50%	0.75%	4.00%

Investment Return

It is assumed that investments of the Systems will return a yield of 7.50% per annum, net of system expenses (investment and administrative) (effective 6/30/18).

Cost-of-Living Adjustments

The long-term cost-of-living adjustment assumed in the valuation is 1.65% per year, based on the current policy of the Board. The Board policy is as follows:

- If the June to June change in the CPI-U is less than 2.00% for consecutive one-year periods, a cost-of-living increase of 2.00% will be granted when the cumulative increase is equal to or greater than 2.00%, at which point the cumulative increase in the CPI-U will be reset to be based on the June value immediately preceding the January 1 at which the 2.00% cost-of-living increase is granted.
- If the June to June change in the CPI-U is greater than or equal to 2.00%, but less than 5.00%, a cost-of-living increase of 2.00% will be granted.
- If the June to June change in the CPI-U is greater than or equal to 5.00%, a cost-of-living increase of 5.00% will be granted.

The actuarial assumption increases from 1.20% to 1.65% over nine years (from fiscal year 2018 to fiscal year 2027). The COLA applies to service retirements and beneficiary annuities. The COLA does not apply to the benefits for in-service death payable to spouses (where the spouse is over age 60), and does not apply to the spouse with children pre-retirement death benefit, the dependent children pre-retirement death benefit, or the dependent parent death benefit. The total lifetime COLA cannot exceed 80% of the original benefit. Future COLAs for current benefit recipients reflect actual cumulative adjustments granted at the time of valuation (effective 6/30/17).

Mortality Rates

Active Member Mortality

PSRS

Mortality rates for PSRS active members are based on RP 2006 White Collar Employee Mortality Table, multiplied by an adjustment factor of 0.75 at all ages for both males and females, with static projection using the 2014 SSA Improvement Scale to 2028 (i.e. a 12-year projection from the date first implemented, the approximate duration of the total actuarial accrued liability). Illustrative rates per 1,000 members at various ages are as follows (effective 6/30/16):

PSRS Active Member Mortality

Age	Male	Female
20	0.196	0.097
30	0.228	0.123
40	0.280	0.224
50	0.851	0.666
60	1.929	1.205
70	6.434	3.579

PEERS

Mortality rates for PEERS active members are based on the RP 2006 Total Dataset Employee Mortality Table, multiplied by an adjustment factor of 0.75 at all ages for both males and females, with static projection using the 2014 SSA Improvement Scale to 2028 (i.e. a 12-year projection from the date first implemented, the approximate duration of the total actuarial accrued liability). Illustrative rates per 1,000 members at various ages are as follows (effective 6/30/16):

PEERS Active Member Mortality

Age	Male	Female
20	0.279	0.114
30	0.325	0.146
40	0.399	0.265
50	1.214	0.789
60	2.751	1.429
70	8.672	4.156

Service Retiree, Beneficiary and Survivor Mortality

PSRS

Mortality rates for PSRS non-disabled retirees and beneficiaries are based on the RP 2006 White Collar Mortality Table multiplied by the plan specific adjustment factors shown in the table below, with static projections using the 2014 SSA Improvement Scale to 2028 (i.e. a 12-year projection from the date first implemented, the approximate duration of the total actuarial accrued liability). (effective 6/30/16).

PSRS Non-Disabled Retiree and Beneficiary Plan Specific Mortality Adjustment Factors

Age	Male	Female
<60	1.00	1.00
60-74	0.89	0.67
75-89	1.05	0.91
>=90	1.05	1.16

Illustrative rates per 1,000 members at various ages are as follows (effective 6/30/16):

PSRS Service Retiree, Beneficiary and Survivor Mortality		
Age	**Male**	**Female**
40	0.373	0.298
50	2.655	1.982
60	3.639	2.034
70	9.212	6.211
80	34.813	25.742
90	126.672	118.203
100	314.507	310.679
110	465.57	493.661

PEERS

Mortality rates for PEERS non-disabled retirees and beneficiaries are based on the RP 2006 Total Dataset Mortality Table multiplied by the plan specific adjustment factors shown in the table below, with static projections using the 2014 SSA Improvement Scale to 2028 (i.e. a 12-year projection from the date first implemented, the approximate duration of the total actuarial accrued liability) (effective 6/30/16).

PEERS Non-Disabled Retiree and Beneficiary Plan Specific Mortality Adjustment Factors		
Age	**Male**	**Female**
<60	1.00	1.00
60-74	1.49	0.77
75-89	1.27	1.03
>=90	1.16	1.04

Illustrative rates per 1,000 members at various ages are as follows (effective 6/30/16):

PEERS Service Retiree, Beneficiary and Survivor Mortality		
Age	**Male**	**Female**
40	0.532	0.353
50	3.904	2.642
60	9.060	3.119
70	20.854	8.702
80	50.476	33.375
90	153.099	113.293
100	347.456	278.540
110	514.345	442.593

Disability Retiree Mortality

Mortality rates for PSRS and PEERS disabled retirees are based on the RP 2006 Disabled Retiree Mortality Table, with static projections using the 2014 SSA Improvement Scale to 2028 (i.e. a 12-year projection from the date first implemented, the approximate duration of the total actuarial accrued liability) (effective 6/30/16).

Illustrative rates per 1,000 members at various ages are as follows (effective 6/30/16):

PSRS and PEERS Disability Retiree Mortality		
Age	**Male**	**Female**
40	9.317	4.862
50	19.588	11.367
60	20.817	13.263
70	33.674	24.771
80	68.090	56.760
90	168.008	134.892
100	311.674	275.075
110	443.401	425.570

Retirement Rates

Retirement is assumed in accordance with the following rates per 1,000 eligible members (effective 6/30/16):

PSRS Active Member Retirement											
	Years of Service										
Age	<=20	21	22	23	24	25	26	27	28	29	>=30
<50	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	3.00%	3.00%	3.00%	3.00%	45.00%
50	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	3.00%	3.00%	3.00%	3.00%	45.00%
51	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	3.00%	3.00%	3.00%	20.00%	45.00%
52	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	3.00%	3.00%	20.00%	20.00%	45.00%
53	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	3.00%	30.00%	20.00%	20.00%	45.00%
54	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	30.00%	20.00%	20.00%	20.00%	45.00%
55	5.00%	5.00%	5.00%	5.00%	5.00%	40.00%	20.00%	20.00%	20.00%	20.00%	45.00%
56	3.00%	3.00%	3.00%	3.00%	40.00%	20.00%	20.00%	20.00%	20.00%	20.00%	45.00%
57	3.00%	3.00%	3.00%	40.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	45.00%
58	3.00%	3.00%	40.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	45.00%
59	3.00%	40.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	45.00%
60	15.00%	15.00%	15.00%	15.00%	15.00%	20.00%	20.00%	20.00%	20.00%	20.00%	45.00%
61	15.00%	15.00%	15.00%	15.00%	15.00%	20.00%	20.00%	20.00%	20.00%	20.00%	45.00%
62	15.00%	15.00%	15.00%	15.00%	15.00%	20.00%	20.00%	20.00%	20.00%	20.00%	45.00%
63	15.00%	15.00%	15.00%	15.00%	15.00%	20.00%	20.00%	20.00%	20.00%	20.00%	45.00%
64	15.00%	15.00%	15.00%	15.00%	15.00%	20.00%	20.00%	20.00%	20.00%	20.00%	45.00%
65	25.00%	25.00%	25.00%	25.00%	25.00%	40.00%	40.00%	40.00%	40.00%	40.00%	45.00%
66	25.00%	25.00%	25.00%	25.00%	25.00%	30.00%	30.00%	30.00%	30.00%	30.00%	45.00%
67	25.00%	25.00%	25.00%	25.00%	25.00%	30.00%	30.00%	30.00%	30.00%	30.00%	45.00%
68	25.00%	25.00%	25.00%	25.00%	25.00%	30.00%	30.00%	30.00%	30.00%	30.00%	45.00%
69	25.00%	25.00%	25.00%	25.00%	25.00%	30.00%	30.00%	30.00%	30.00%	30.00%	45.00%
>=70	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

PEERS Active Member Retirement											
	Years of Service										
Age	<=20	21	22	23	24	25	26	27	28	29	>=30
<50	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	5.00%	5.00%	5.00%	5.00%	30.00%
50	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	5.00%	5.00%	5.00%	5.00%	20.00%
51	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	5.00%	5.00%	5.00%	30.00%	20.00%
52	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	5.00%	5.00%	30.00%	20.00%	20.00%
53	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	5.00%	30.00%	20.00%	20.00%	20.00%
54	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	30.00%	20.00%	20.00%	20.00%	20.00%
55	5.00%	5.00%	5.00%	5.00%	5.00%	30.00%	20.00%	20.00%	20.00%	20.00%	20.00%
56	5.00%	5.00%	5.00%	5.00%	30.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%
57	5.00%	5.00%	5.00%	30.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%
58	5.00%	5.00%	30.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%
59	5.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%
60	10.00%	16.00%	16.00%	16.00%	16.00%	16.00%	16.00%	16.00%	16.00%	16.00%	16.00%
61	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%
62	24.00%	24.00%	24.00%	24.00%	24.00%	24.00%	24.00%	24.00%	24.00%	24.00%	24.00%
63	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%
64	14.00%	14.00%	14.00%	14.00%	14.00%	14.00%	14.00%	14.00%	14.00%	14.00%	14.00%
65	26.00%	26.00%	26.00%	26.00%	26.00%	26.00%	26.00%	26.00%	26.00%	26.00%	26.00%
66	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%
67	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%
68	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%
69	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%
70	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%
71	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%
72	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%
73	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%
74	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%
>=75	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Withdrawal Rates

Termination of membership prior to eligibility for retirement from all causes other than death, disability or retirement is assumed in accordance with the following illustrative rates per 1,000 members (effective 6/30/16):

PSRS Active Member Withdrawal	
Years of Service	Rate
0	240.0
1	115.0
2	100.0
3	80.0
4	70.0
5	60.0
10	27.5
15	15.0
20	10.0
25+	0.0

PEERS Active Member Withdrawal	
Years of Service	Rate
0	350.0
1	230.0
2	180.0
3	150.0
4	125.0
5	100.0
10	55.0
15	33.0
20	18.0
25+	0.0

Refund of Contributions

Active members who terminate employment with less than five years of service and inactive members with less than five years of service are assumed to take an immediate refund of their contributions.

Active members who terminate employment with five or more years of service, but prior to satisfying the age and service requirements for service retirement, and inactive members with five or more years of service are assumed to select the option that has the greater present value between an immediate refund of their contributions and a life annuity deferred to their earliest retirement age (effective 6/30/16).

Active members who terminate employment with five or more years of service and satisfy the age and service requirements for service retirement upon termination, and inactive members with five or more years of service and currently eligible for service retirement are assumed to select an immediate life annuity (effective 6/30/16).

Disability Rates

Retirement for disability prior to age 60 is assumed in accordance with the following illustrative rates per 1,000 eligible members (effective 6/30/16):

PSRS Active Member Disability	
Age	Rates
25	0.0017%
30	0.0080%
35	0.0220%
40	0.0480%
45	0.0780%
50	0.1110%
55	0.1460%

PEERS Active Member Disability	
Age	Rates
25	0.0017%
30	0.0080%
35	0.0016%
40	0.0320%
45	0.0640%
50	0.1220%
55	0.2100%

Interest on Member Accounts

1.00% per annum (effective 6/30/10)

Service Purchases

A 1.00% load for PSRS and a 1.50% load for PEERS is added to the Normal Cost to account for anticipated losses resulting from service purchases and reinstatements (effective 6/30/16).

Provisions for Expenses

There is no specific provision for expenses. The implicit assumption is that administrative expenses are paid from investment income in excess of 7.6% per annum (effective 6/30/17).

Dependent Assumptions

(effective 6/30/16)

- **Marriage Assumptions (Pre-retirement)** 70% of male and female members are assumed to be married. Beneficiaries are assumed to be of the opposite sex from the member. Male spouses are assumed to be two years older than that of female spouses.
- **Beneficiary Assumptions (Post-retirement)** Retired members, regardless of gender, are assumed to be three years older than their joint annuitant.

Survivor Benefits (Pre-retirement PSRS Only)

All active members under age 50 are assumed to have two dependent children. Each child is assumed to receive payments of $860 per month for 18 years if the member is under age 32, and grading down to zero years if the member is age 50 (effective 6/30/16).

Return of Unused Member Account Balance

A cash refund feature is included in the valuation of annuity benefits to reflect that cumulative annuity payments to members may not be less than the amount of contributions paid by the member (effective 6/30/16).

Actuarial Cost Method

The actuarial cost method is Entry Age Normal - Level Percent of Payroll.

The normal cost is calculated separately for each active member and is equal to the level percentage of payroll needed as an annual contribution from entry age to retirement age to fund projected benefits. The Actuarial Accrued Liability on any valuation date is the accumulated value of such normal costs from entry age to the valuation date (effective 1947).

Asset Valuation Method

The Actuarial Value of Assets is a smoothed value of assets. The actuarial value at June 30 of the prior year is projected by increasing the amount by 7.6% interest, adding contributions with 7.6% interest for half the year, and subtracting benefit payments for half the year. Twenty percent of the difference between the actual returns at market value for the year and expected return from the projection of the prior year actuarial value, along with corresponding amounts from each of the prior four years is added to the actuarial value. The Actuarial Value of Assets was reset to market value at June 30, 2003. The assumed rate of return was changed to 7.50% effective June 30, 2018, therefore future years will utilize 7.50% in the projections. The methodology remains unchanged (1994).

Amortization of Unfunded Actuarial Accrued Liability

Gains and losses occurring from census experience different than assumed and assumption changes are amortized over a 30-year period as a level percent of payroll. A new gain or loss base is established each year based on the additional gain or loss during that year and that base is amortized over a new 30-year period. The purpose of the method is to give a smooth progression of the costs from year to year and, at the same time, provide for an orderly funding of the unfunded liabilities. Increases or decrease in the Actuarial Accrued Liability caused by changes in the benefit provisions are amortized over 20 years, as determined in the 2007 session of the Legislature.

The method for amortizing the unfunded Actuarial Accrued Liability was changed from a rolling 30-year method to the closed 30-year method described above effective June 30, 2011.

For accounting, gains and losses occurring form census experience different than assumed and assumption changes are amortized into expense over the average expected future service of all plan participants (active and inactives). Gains and losses occurring from investment experience different than assumed are amortized into expense over a five year period. The effect of plan changes on the plan liability are fully recognized in expense in the year in which they occur.

Note: Dates reflect the effective date as adopted by the Board of Trustees. The most recent assumption revisions were approved by the Board of Trustees at their October 2018 meeting. The revised assumptions were used for the June 30, 2018 valuation.

The Future Starts Now.

At PSRS/PEERS, we understand the passion our educators and schools have for providing the best for their students and families. We have a similar outlook when it comes to providing financial security for our members. We work to ensure they have access to the best possible financial future by providing lifetime retirement benefits and financial security in retirement. Together, our efforts have a positive impact on many lives. While they provide education for today, we provide retirement for tomorrow.

Statistical Section

Statistical Summary

Benefit Recipients

The largest percentage of the Systems' benefit recipients are service retirees. Service retirement benefits are payable to members who have met age and service requirements. The number of PSRS service retirees on the payment rolls increased by 1,301 from 54,629 at June 30, 2017 to 55,930 at June 30, 2018. The number of PEERS service retirees on the payment rolls increased by 1,240 from 26,335 at June 30, 2017 to 27,575 at June 30, 2018.

Disability benefits in PSRS and PEERS are paid to members who are unable to earn a livelihood due to permanent disability and who have met certain eligibility requirements. The number of PSRS disability retirees on the payment rolls increased by ten from 981 at June 30, 2017 to 991 at June 30, 2018. The number of PEERS disability retirees on the payment rolls increased by nine from 804 at June 30, 2017 to 813 at June 30, 2018.

In both PSRS and PEERS, beneficiary payments are available to survivors if the retiree elected this option. Three Joint-and-Survivor benefit plans and two Term-Certain benefit plans are available. In PSRS, survivor benefits are also available to designated beneficiaries of members who die before retirement.

The charts on page 124 detail the number of benefit recipients by type and monthly benefit amount for each System.

Pension Funding

An unfunded actuarial accrued liability (UAAL) for pension benefits generally represents the difference between the present value of all benefits estimated to be payable to plan members as a result of their age, salary, and service through the valuation date and the actuarial value of plan assets available to pay those benefits. This amount changes over time as a result of changes in accrued benefits, pay levels, rates of return on investments, changes in actuarial assumptions, and changes in the demographics of the employee base. Each year an outside actuary performs a valuation to determine the present value of the benefits payable (actuarial accrued liability) and compares this to the assets available to arrive at the funded status of the Systems.

The charts on page 132 show a comparison of the assets and liabilities of the Systems over time. At June 30, 2018, PSRS was 84.0% pre-funded and PEERS was 86.1% pre-funded. At June 30, 2017, PSRS was 84.0% pre-funded and PEERS was 85.8% pre-funded. The pre-funded status remained consistent with the prior year as a result of a reduction in the assumed rate of return as of June 30, 2018. Detailed information on actuarial assumptions, can be found in the Actuarial Section of this report.

Changes in Net Assets

The charts on page 125 detail a 10-year history of the additions (revenue) and deductions (expenses) of the Systems.

Other charts in this section detail demographic information concerning our members and employers.

The data in this section was derived from internal sources and the annual actuarial valuation reports.

PSRS Summary of Benefit Recipients By Type As of June 30, 2018

Amount of Monthly Benefit	Service Retirement	Disability Retirement	Beneficiary Recipients: Disability	Beneficiary Recipients: Survivors	Beneficiary Recipients: Beneficiary	Beneficiary Recipients: Term-Certain	Total
<$1,000	4,853	24	216	401	309	5	5,808
$1,000 - $1,999	6,397	353	109	180	686	7	7,732
$2,000 - $2,999	10,447	441	27	92	763	8	11,778
$3,000 - $3,999	13,217	148	5	79	625	2	14,076
$4,000 - $4,999	10,656	22	2	41	422	2	11,145
$5,000 - $5,999	6,090	2	-	14	220	-	6,326
$6,000+	4,270	1	-	22	137	-	4,430
Total	55,930	991	359	829	3,162	24	61,295

PEERS Summary of Benefit Recipients By Type As of June 30, 2018

Amount of Monthly Benefit	Service Retirement	Disability Retirement	Beneficiary Recipients: Disability	Beneficiary Recipients: Survivors*	Beneficiary Recipients: Beneficiary	Beneficiary Recipients: Term-Certain	Total
<$500	13,947	533	219	-	1,045	23	15,767
$500 - $999	6,843	231	33	-	404	8	7,519
$1,000 - $1,999	4,991	49	6	-	197	-	5,243
$2,000 - $2,999	1,182	-	-	-	23	2	1,207
$3,000 - $3,999	386	-	-	-	8	-	394
$4,000+	226	-	-	-	4	-	230
Total	27,575	813	258	-	1,681	33	30,360

** Benefit not available in PEERS.*

PSRS Schedule of Changes in Fiduciary Net Position, Last 10 Fiscal Years

(Dollar amounts in thousands)

	Fiscal Year 2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Additions by source										
Member contributions	$ 599,582	$ 636,633	$ 638,357	$ 620,214	$ 665,926	$ 679,618	$ 689,187	$ 704,786	$ 719,625	$ 726,996
Employer contributions	563,454	594,326	594,732	658,936	634,040	643,763	656,925	670,794	684,858	696,970
Investment income	(5,301,374)	2,723,032	5,018,519	449,822	3,378,531	4,927,193	1,447,144	533,174	4,104,110	3,173,732
Other income	627	867	930	441	20	6	26	6	13	4
Total additions by source	(4,137,711)	3,954,858	6,252,538	1,729,413	4,678,517	6,250,580	2,793,282	1,908,760	5,508,606	4,597,702
Deductions by type										
Monthly benefits										
Service retirement	1,490,693	1,584,382	1,674,931	1,775,305	1,880,783	1,999,520	2,102,511	2,203,773	2,288,945	2,360,945
Service retirement -PLSO	74,042	52,117	69,956	69,392	61,062	58,849	37,191	32,365	34,721	37,754
Disability	16,355	17,284	18,406	19,640	21,120	22,138	23,447	25,309	26,379	27,235
Beneficiary	70,518	75,922	82,327	85,894	92,799	100,040	107,109	114,829	121,170	129,722
Lump-sum refunds										
Death	7,274	7,075	7,763	9,295	8,344	7,123	7,712	9,078	8,504	8,879
Withdrawal/transfers	39,134	41,084	45,876	45,161	47,051	48,799	48,226	45,553	42,114	42,450
Administrative expenses/other	10,135	10,430	8,839	8,135	8,714	8,919	10,015	11,563	10,497	11,418
Total deductions by type	1,708,151	1,788,294	1,908,098	2,012,822	2,119,873	2,245,388	2,336,211	2,442,470	2,532,330	2,618,403
Changes in plan net position	$(5,845,862)	$2,166,564	$ 4,344,440	$(283,409)	$2,558,644	$4,005,192	$ 457,071	$ (533,710)	$2,976,276	$1,979,299

PEERS Schedule of Changes in Fiduciary Net Position, Last 10 Fiscal Years

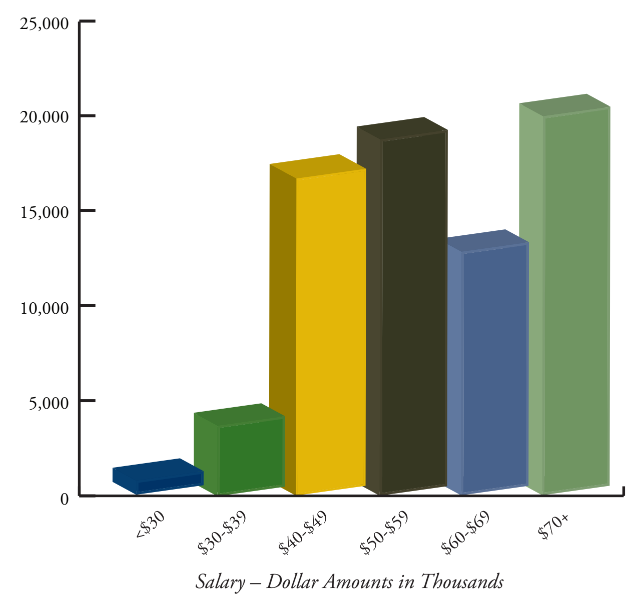
(Dollar amounts in thousands)

	Fiscal Year 2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Additions by source										
Member contributions	$ 89,427	$ 95,924	$ 95,792	$ 95,095	$ 103,271	$ 106,430	$ 110,444	$ 114,258	$ 118,447	$ 121,468
Employer contributions	85,916	91,479	90,816	101,930	97,059	100,690	103,624	106,717	111,240	115,103
Investment income	(489,552)	261,135	502,934	39,774	353,729	544,154	163,718	60,317	485,047	381,524
Other income	1	-	-	-	-	1	2	-	-	-
Total additions by source	(314,208)	448,538	689,542	236,799	554,059	751,275	377,788	281,292	714,734	618,095
Deductions by type										
Monthly benefits										
Service retirement	115,757	124,928	136,912	150,334	163,134	179,262	195,980	212,327	229,599	246,062
Service retirement -PLSO	3,676	2,972	5,178	7,191	5,006	5,971	6,576	4,410	6,585	7,274
Disability	2,353	2,514	2,798	3,057	3,430	3,665	3,917	4,158	4,313	4,453
Beneficiary	4,881	5,382	5,881	6,363	7,094	7,847	8,769	9,791	10,581	11,575
Lump-sum refunds										
Death	765	790	1,047	1,113	1,202	1,063	1,418	1,159	1,266	1,075
Withdrawal/transfers	14,908	15,921	17,776	17,357	17,434	18,817	18,410	18,546	16,925	17,195
Administrative expenses/other	5,440	5,280	5,611	5,591	4,803	4,840	5,629	6,981	6,377	7,113
Total deductions by type	147,780	157,787	175,203	191,006	202,103	221,465	240,699	257,372	275,646	294,747
Changes in plan net position	$(461,988)	$ 290,751	$ 514,339	$ 45,793	$ 351,956	$ 529,810	$ 137,089	$ 23,920	$ 439,088	$ 323,348

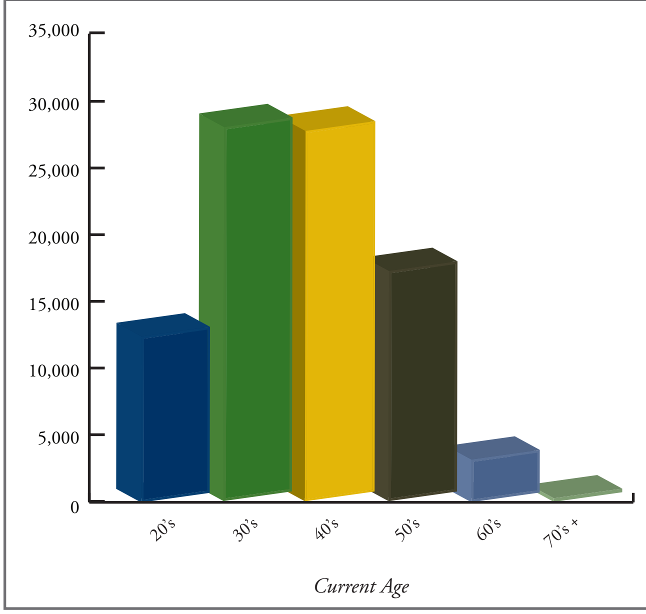
PSRS Summary of Changes in Membership During 2017-2018

		Male	Female	Total
Membership July 1, 2017		21,363	73,667	95,030
New members added		1,100	3,963	5,063
Less:	Service retirements	570	1,836	2,406
	Disability retirements	7	43	50
	Withdrawals	326	939	1,265
	Deaths	39	54	93
		942	2,872	3,814
	Other	(142)	87	(55)
Net change in membership 2017-2018		16	1,178	1,194
Membership June 30, 2018		21,379	74,845	96,224

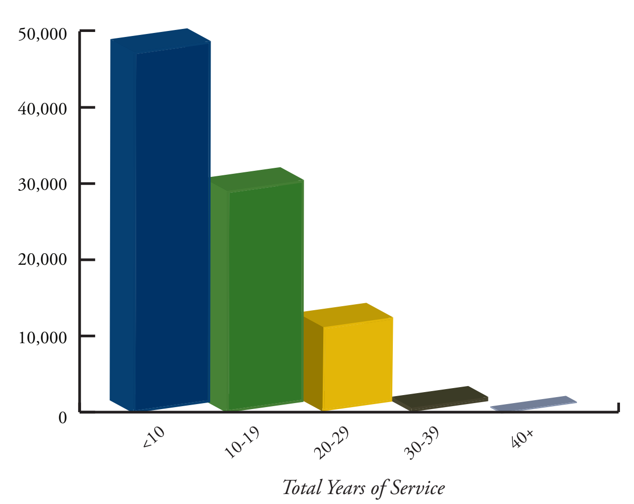
2017-2018 PSRS Members by Annual Salary



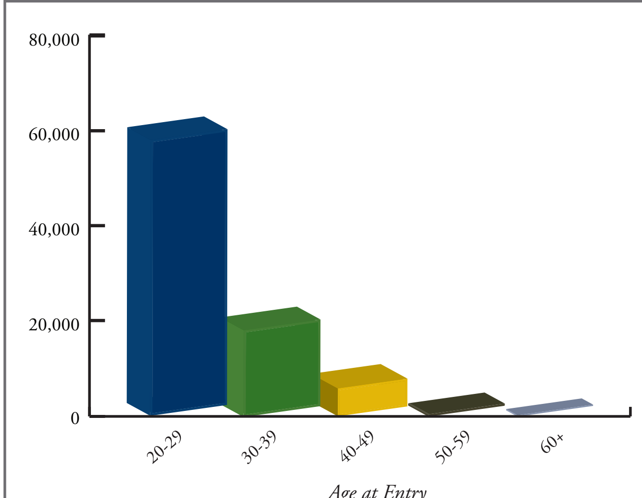
2017-2018 PSRS Members by Current Age



2017-2018 PSRS Members by Total Years of Service



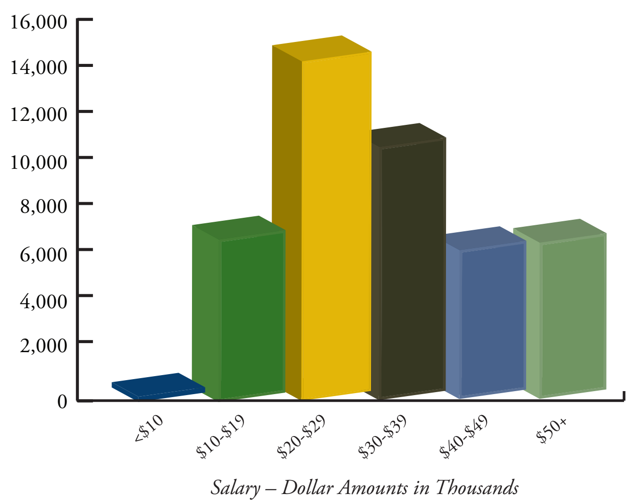
2017-2018 PSRS Member Age at Entry Into System



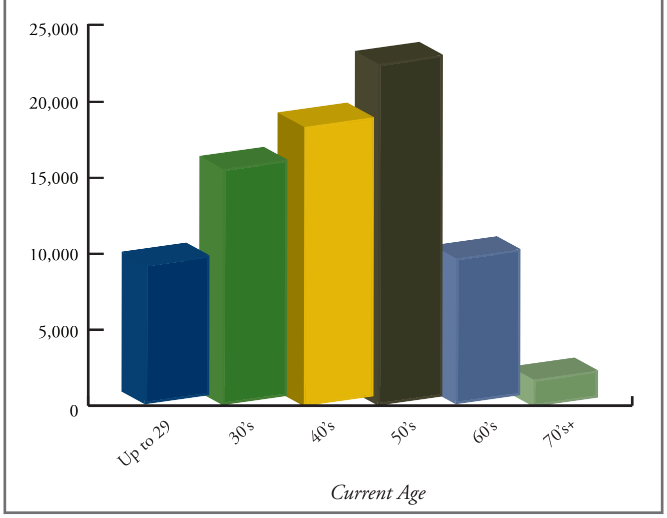
PEERS Summary of Changes in Membership During 2017-2018

		Male	Female	Total
Membership July 1, 2017		22,155	58,950	81,105
New members added		2,320	6,155	8,475
Less:	Service retirements	491	1,534	2,025
	Disability retirements	8	28	36
	Withdrawals	962	2,265	3,227
	Deaths	84	89	173
		1,545	3,916	5,461
	Other	(352)	191	(161)
Net change in membership 2017-2018		423	2,430	2,853
Membership June 30, 2018		22,578	61,380	83,958

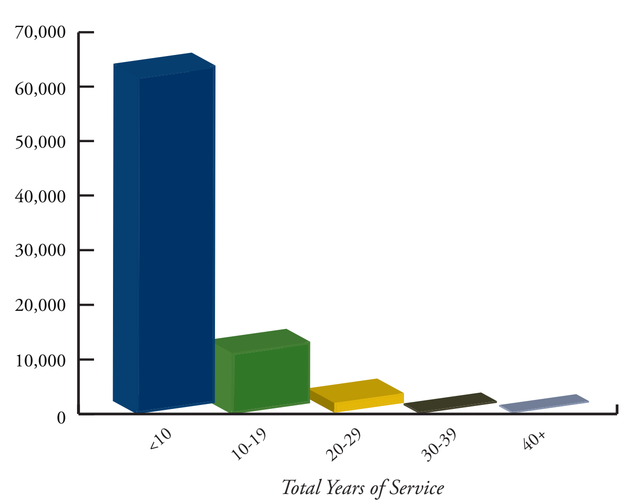
2017-2018 PEERS Members by Annual Salary



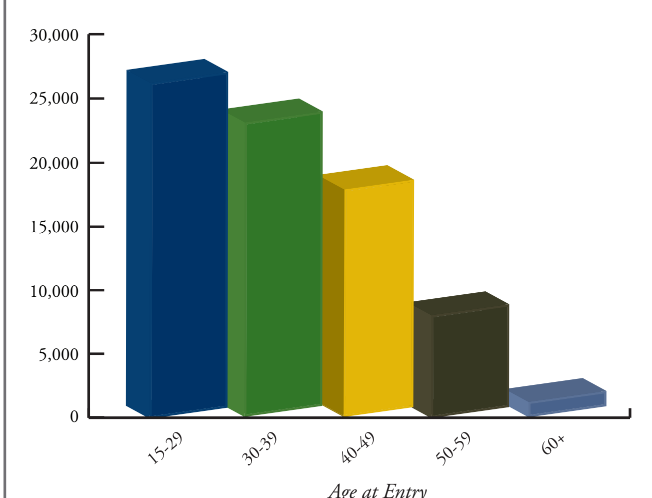
2017-2018 PEERS Members by Current Age



2017-2018 PEERS Members by Total Years of Service



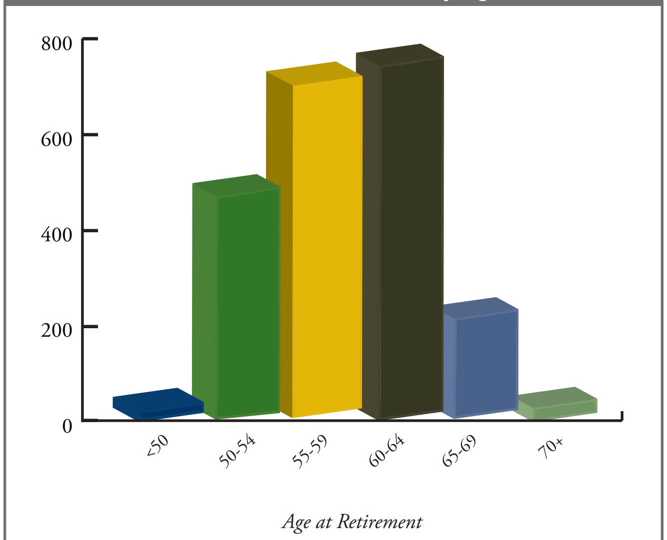
2017-2018 PEERS Member Age at Entry Into System



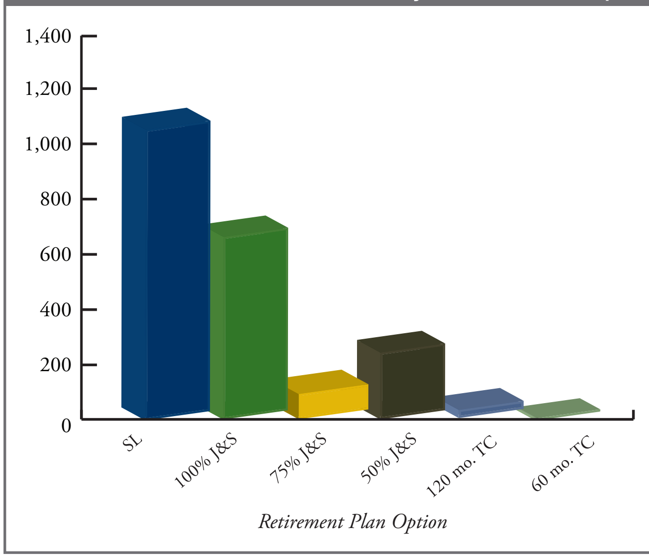
PSRS 2017-2018 New Service Retirees

	Service Retirees	Disability Retirees	Beneficiaries
Retirees July 1, 2017	54,629	981	4,162
Added during the year	2,406	50	405
Died during the Year	(1,105)	(38)	(202)
Other	0	(2)	9
Retirees June 30, 2018	55,930	991	4,374

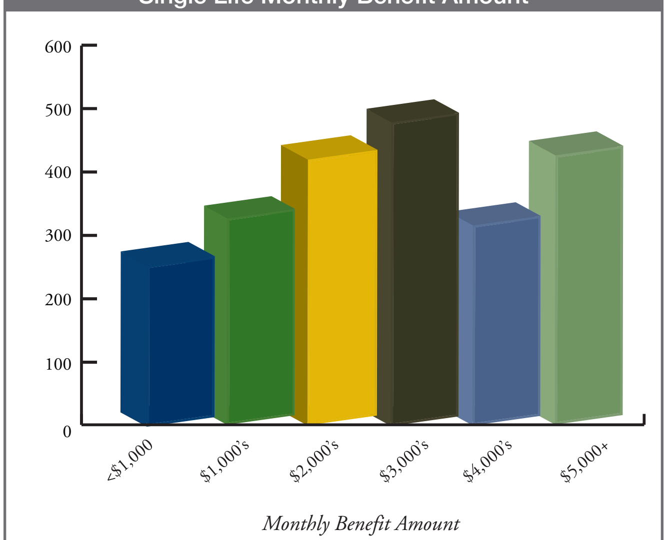
2017-2018 PSRS New Service Retirees by Age at Retirement



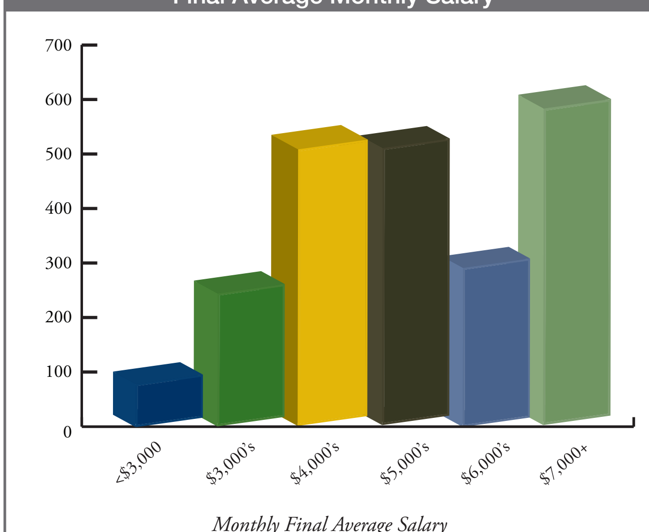
2017-2018 PSRS New Service Retirees by Retirement Plan Option



2017-2018 PSRS New Service Retirees by Single Life Monthly Benefit Amount



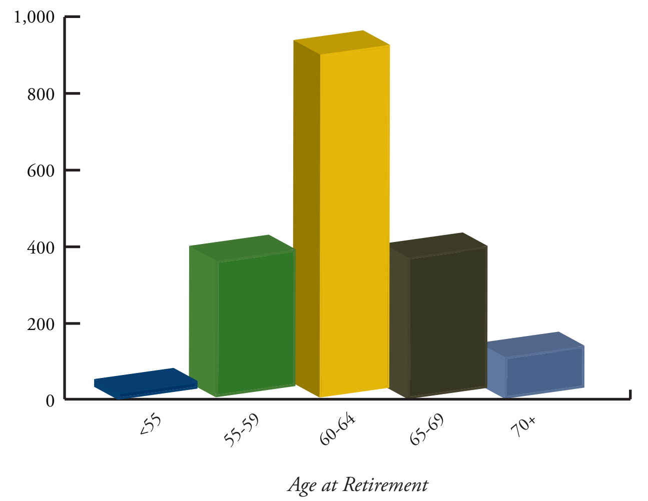
2017-2018 PSRS New Service Retirees by Final Average Monthly Salary



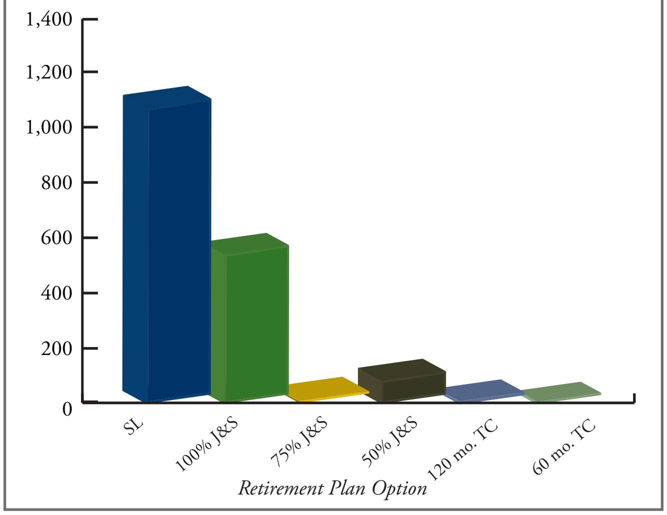
PEERS 2017-2018 New Service Retirees

	Service Retirees	Disability Retirees	Beneficiaries
Retirees July 1, 2017	26,335	804	1,863
Added during the Year	2,025	36	206
Died during the Year	(788)	(27)	(92)
Other	3	0	(5)
Retirees June 30, 2018	27,575	813	1,972

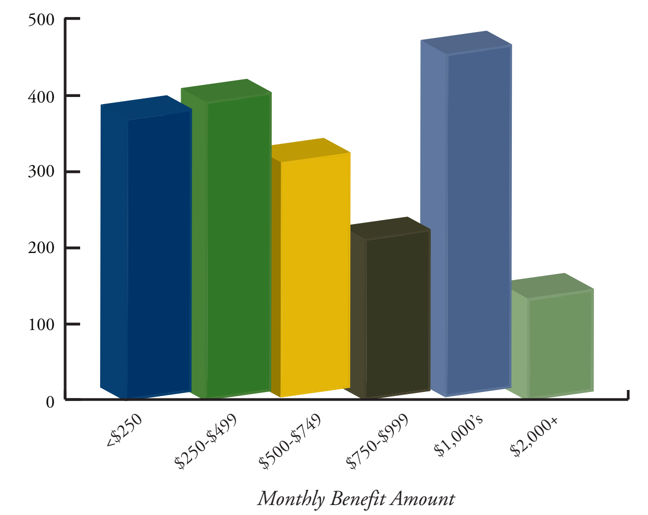
2017-2018 PEERS New Service Retirees by Age at Retirement



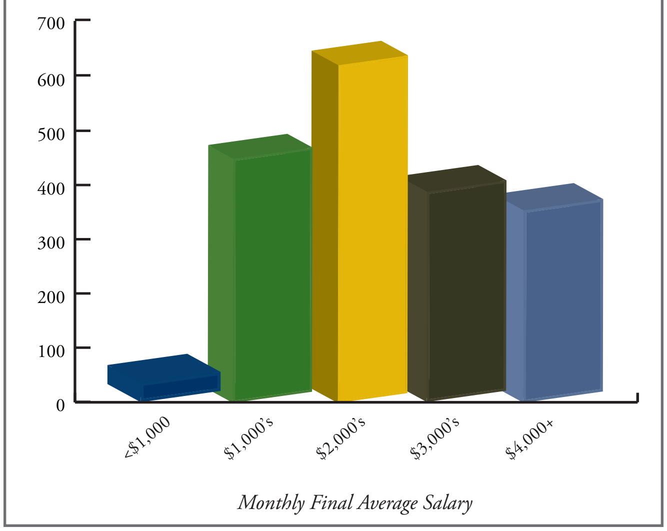
2017-2018 PEERS New Service Retirees by Retirement Plan Option



2017-2018 PEERS New Service Retirees by Single Life Monthly Benefit Amount



2017-2018 PEERS New Service Retirees by Final Average Monthly Salary



PSRS Schedule of Average Benefit Payments to New Service Retirees

	Years of Service							
	5 - 9.9	10 - 14.9	15 - 19.9	20 - 24.9	25 - 29.9	30 - 34.9	35 - 39.9	40+
2017-2018								
Average monthly benefit	$ 708	$ 1,361	$ 2,161	$ 3,124	$ 4,357	$ 5,374	$ 6,871	$ 7,111
Average final average salary	4,394	4,641	5,144	5,632	6,453	6,912	7,410	7,111
Number of retirees	228	263	301	486	712	371	35	10
2016-2017								
Average monthly benefit	$ 639	$ 1,296	$ 2,228	$ 3,213	$ 4,289	$ 5,135	$ 6,427	$ 6,881
Average final average salary	3,806	4,476	5,320	5,737	6,395	6,574	7,056	6,881
Number of retirees	249	243	339	531	756	427	44	12
2015-2016								
Average monthly benefit	$ 671	$ 1,322	$ 2,179	$ 3,127	$ 4,152	$ 4,942	$ 5,627	$ 6,686
Average final average salary	4,141	4,515	5,192	5,628	6,193	6,389	6,195	6,686
Number of retirees	251	265	328	530	745	430	37	17
2014-2015								
Average monthly benefit	$ 729	$ 1,351	$ 2,102	$ 3,083	$ 4,120	$ 5,064	$ 6,130	$ 6,418
Average final average salary	4,342	4,581	5,004	5,562	6,091	6,324	6,521	6,418
Number of retirees	255	308	313	487	677	469	46	15
2013-2014								
Average monthly benefit	$ 697	$ 1,299	$ 2,135	$ 3,108	$ 3,955	$ 5,147	$ 6,319	$ 6,601
Average final average salary	4,257	4,385	5,024	5,557	5,930	6,396	6,730	6,601
Number of retirees	274	260	317	483	746	696	101	11
2012-2013								
Average monthly benefit	$ 695	$ 1,327	$ 2,035	$ 3,143	$ 3,927	$ 4,998	$ 6,739	$ 6,033
Average final average salary	4,067	4,554	4,818	5,609	5,896	6,212	7,218	6,033
Number of retirees	233	263	286	483	692	583	79	13
2011-2012								
Average monthly benefit	$ 607	$ 1,261	$ 1,995	$ 2,980	$ 3,824	$ 4,893	$ 6,071	$ 5,262
Average final average salary	3,946	4,305	4,795	5,317	5,713	6,070	6,506	5,262
Number of retirees	248	265	293	531	723	767	81	18
2010-2011								
Average monthly benefit	$ 661	$ 1,262	$ 1,969	$ 3,010	$ 3,792	$ 4,815	$ 6,231	$ 6,595
Average final average salary	4,074	4,298	4,754	5,366	5,642	5,974	6,662	6,595
Number of retirees	267	322	289	540	733	832	126	13
2009-2010								
Average monthly benefit	$ 556	$ 1,123	$ 1,915	$ 2,865	$ 3,660	$ 4,836	$ 6,133	$ 5,678
Average final average salary	3,396	3,840	4,566	5,110	5,469	6,007	6,559	5,678
Number of retirees	271	243	207	412	477	653	97	19
2008-2009								
Average monthly benefit	$ 627	$ 1,178	$ 2,035	$ 2,861	$ 3,590	$ 4,598	$ 6,028	$ 5,749
Average final average salary	3,901	4,057	4,801	5,136	5,343	5,697	6,436	5,749
Number of retirees	198	186	198	411	617	892	116	11

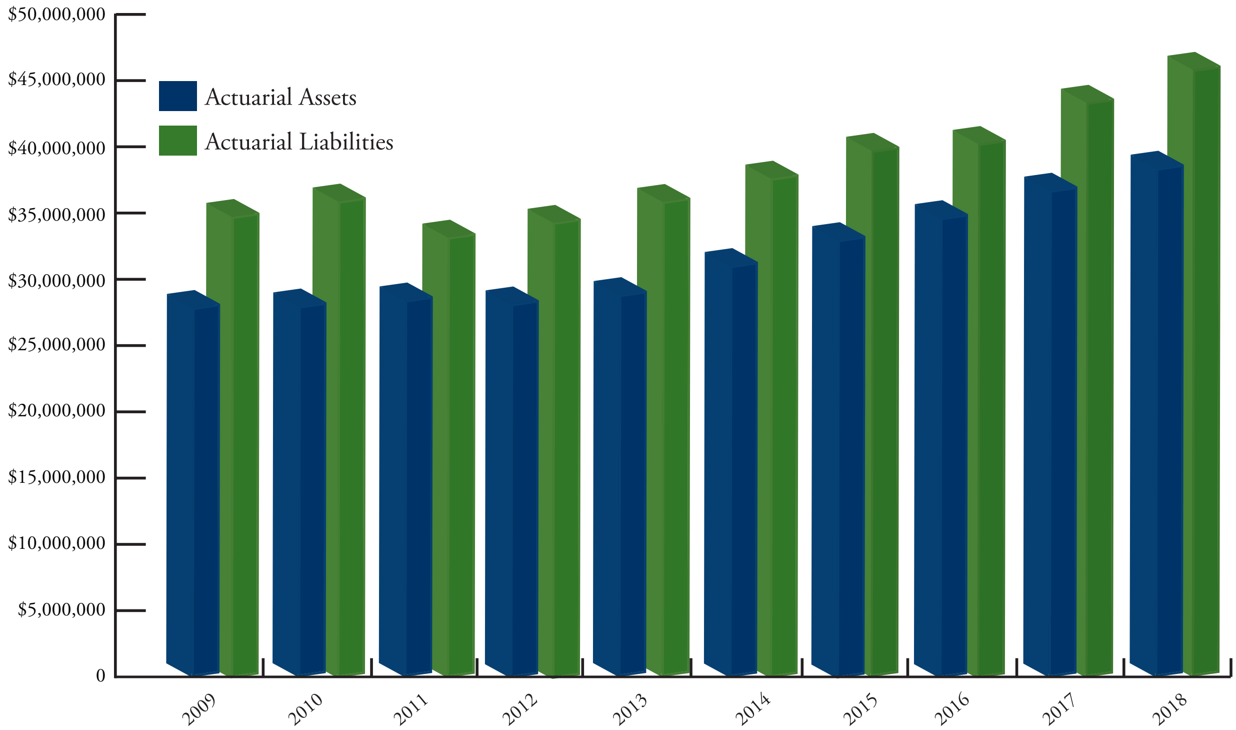
PEERS Schedule of Average Benefit Payments to New Service Retirees

	Years of Service					
	5 - 9.9	10 - 14.9	15 - 19.9	20 - 24.9	25 - 29.9	30+
2017-2018						
Average monthly benefit	$ 244	$ 510	$ 830	$ 1,171	$ 1,787	$ 2,365
Average final average salary	2,167	2,686	3,009	3,303	4,075	4,367
Number of retirees	557	389	348	410	196	125
2016-2017						
Average monthly benefit	$ 255	$ 483	$ 802	$ 1,157	$ 1,690	$ 2,441
Average final average salary	2,209	2,523	2,919	3,225	3,874	4,505
Number of retirees	558	425	339	363	209	129
2015-2016						
Average monthly benefit	$ 238	$ 493	$ 785	$ 1,160	$ 1,630	$ 2,235
Average final average salary	2,078	2,520	2,807	3,231	3,703	4,128
Number of retirees	520	410	328	289	235	121
2014-2015						
Average monthly benefit	$ 237	$ 490	$ 766	$ 1,162	$ 1,665	$ 2,212
Average final average salary	2,054	2,500	2,802	3,229	3,824	4,073
Number of retirees	529	419	303	309	197	127
2013-2014						
Average monthly benefit	$ 228	$ 461	$ 796	$ 1,178	$ 1,588	$ 2,233
Average final average salary	2,042	2,406	2,884	3,257	3,632	4,110
Number of retirees	568	429	301	283	206	132
2012-2013						
Average monthly benefit	$ 219	$ 467	$ 735	$ 1,104	$ 1,512	$ 1,995
Average final average salary	1,958	2,439	2,734	3,054	3,491	3,672
Number of retirees	475	362	250	275	173	121
2011-2012						
Average monthly benefit	$ 227	$ 433	$ 705	$ 1,063	$ 1,508	$ 1,957
Average final average salary	2,010	2,257	2,597	2,954	3,502	3,637
Number of retirees	516	371	246	250	184	147
2010-2011						
Average monthly benefit	$ 221	$ 410	$ 707	$ 1,052	$ 1,389	$ 1,947
Average final average salary	1,965	2,176	2,628	2,920	3,195	3,611
Number of retirees	487	345	231	244	185	164
2009-2010						
Average monthly benefit	$ 196	$ 384	$ 635	$ 979	$ 1,330	$ 1,885
Average final average salary	1,769	2,034	2,339	2,723	3,060	3,582
Number of retirees	503	316	162	180	122	117
2008-2009						
Average monthly benefit	$ 206	$ 374	$ 637	$ 1,021	$ 1,365	$ 1,727
Average final average salary	1,821	2,011	2,349	2,847	3,104	3,240
Number of retirees	417	264	152	216	164	112

Comparisons of Actuarial Assets and Total Actuarial Liabilities

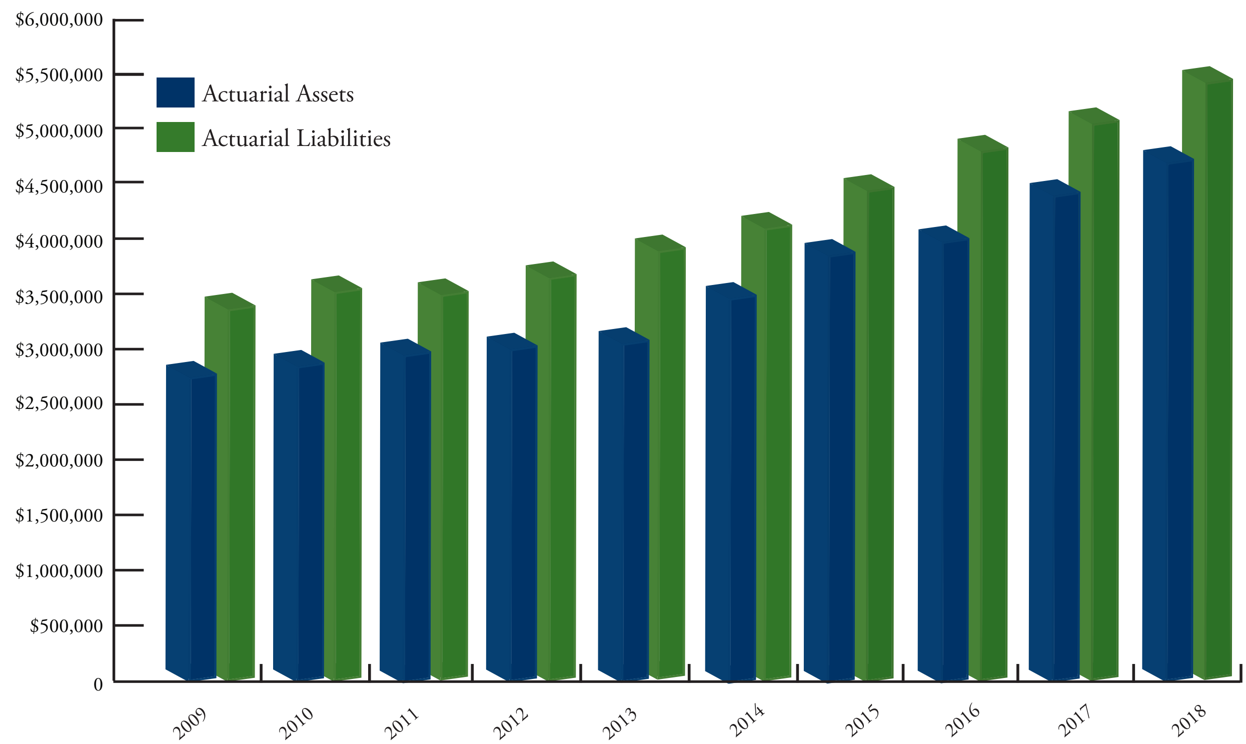
Public School Retirement System of Missouri

Dollar Amounts in Thousands



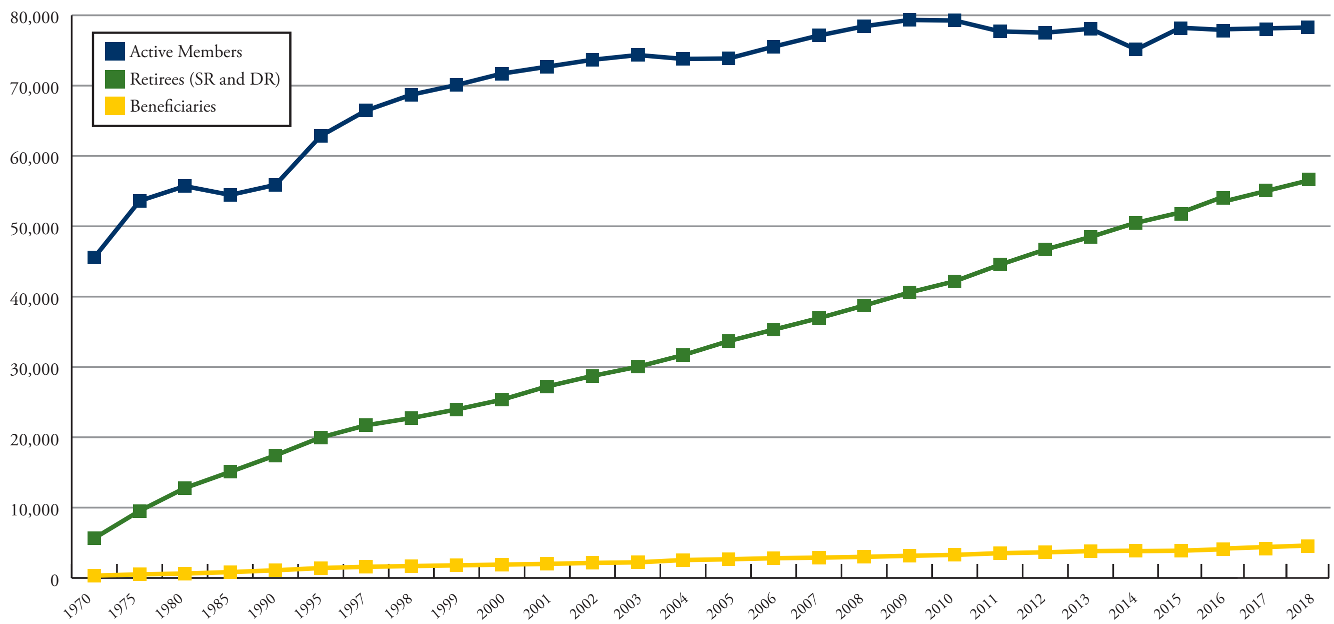
Public Education Employee Retirement System of Missouri

Dollar Amounts in Thousands

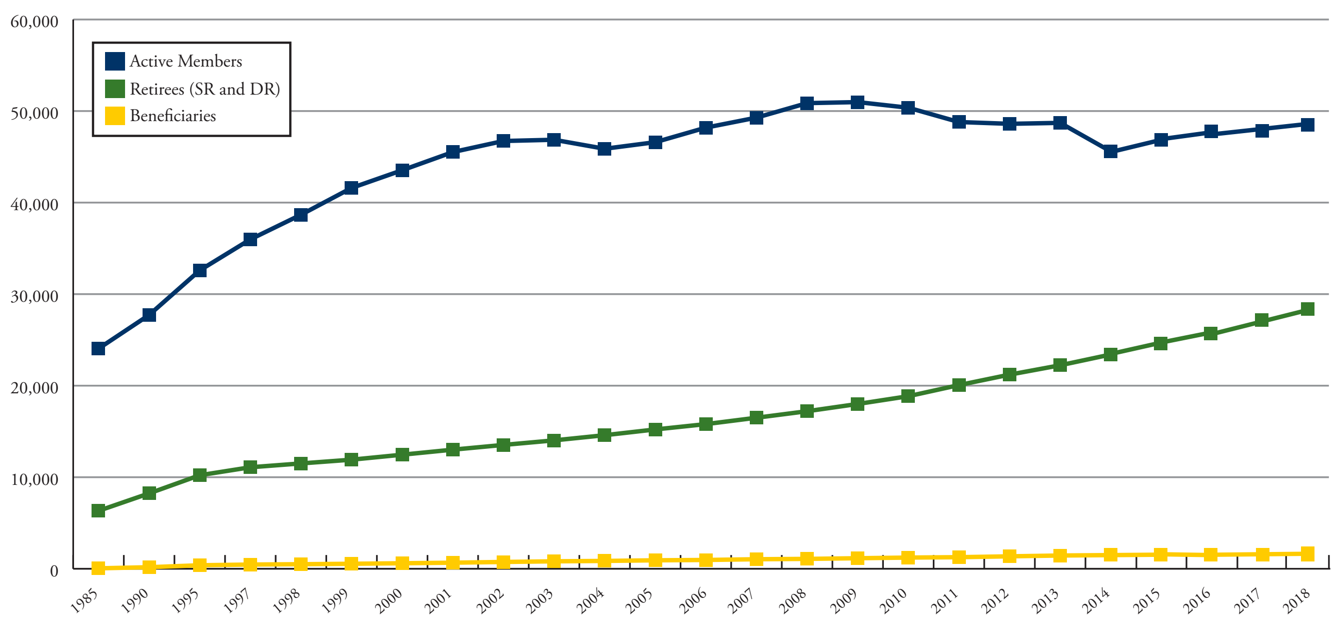


Growth in Membership

Public School Retirement System of Missouri



Public Education Employee Retirement System of Missouri



PSRS Schedule of Covered Employees in the Top 10 Employers

Employer	2018 Covered Employees	2018 Percentage of Total	2017 Covered Employees	2017 Percentage of Total
Special School District - St. Louis	2,922	4%	2,914	4%
Springfield R-XII Schools	2,205	3%	2,208	3%
Rockwood R-VI Schools	1,916	2%	1,926	2%
North Kansas City Schools	1,758	2%	1,735	2%
Columbia Public Schools	1,737	2%	1,726	2%
Ft. Zumwalt R-II Schools	1,736	2%	1,670	2%
Parkway C-2 Schools	1,733	2%	1,703	2%
Francis Howell R-III Schools	1,522	2%	1,510	2%
Lee's Summit R-VII Schools	1,471	2%	1,459	2%
Hazelwood R-I Schools	1,435	2%	1,488	2%
All Others	64,078	77%	63,886	77%
Total - 533 Employers during 2018 and 534 during 2017	82,513	100%	82,225	100%

Employer	2016 Covered Employees	2016 Percentage of Total	2015 Covered Employees	2015 Percentage of Total
Special School District - St. Louis	2,956	4%	2,995	4%
Springfield R-XII Schools	2,208	3%	2,189	3%
Rockwood R-VI Schools	2,036	2%	2,003	2%
Columbia Public Schools	1,844	2%	1,779	2%
Parkway C-2 Schools	1,804	2%	1,769	2%
North Kansas City Schools	1,723	2%	1,713	2%
Ft. Zumwalt R-II Schools	1,611	2%	1,611	2%
Hazelwood R-I Schools	1,559	2%	1,577	2%
Francis Howell R-III Schools	1,549	2%	1,610	2%
Lee's Summit R-VII Schools	1,443	2%	1,415	2%
All Others	64,842	77%	65,940	77%
Total - 534 Employers during 2016 and 535 during 2015	83,575	100%	84,601	100%

Employer	2014 Covered Employees	2014 Percentage of Total	2013 Covered Employees	2013 Percentage of Total
Special School District - St. Louis	3,082	4%	3,080	4%
Springfield R-XII Schools	2,159	3%	2,096	3%
Rockwood R-VI Schools	1,912	2%	1,888	2%
North Kansas City Schools	1,740	2%	1,763	2%
Columbia Public Schools	1,690	2%	1,649	2%
Parkway C-2 Schools	1,672	2%	1,714	2%
Francis Howell R-III Schools	1,575	2%	1,538	2%
Ft. Zumwalt R-II Schools	1,568	2%	1,549	2%
Hazelwood R-I Schools	1,566	2%	1,600	2%
Lee's Summit R-VII Schools	1,390	2%	1,360	2%
All Others	64,335	77%	63,377	77%
Total - 535 Employers	82,689	100%	81,614	100%

PSRS Schedule of Covered Employees in the Top 10 Employers (continued)

	2012		2011	
Employer	Covered Employees	Percentage of Total	Covered Employees	Percentage of Total
Special School District - St. Louis	3,039	4%	3,020	4%
Springfield R-XII Schools	2,096	3%	2,116	3%
Rockwood R-VI Schools	1,910	2%	1,936	2%
Parkway C-2 Schools	1,794	2%	1,789	2%
North Kansas City Schools	1,699	2%	1,663	2%
Columbia Public Schools	1,640	2%	1,592	2%
Hazelwood R-I Schools	1,589	2%	1,510	2%
Ft. Zumwalt R-II Schools	1,508	2%	1,525	2%
Francis Howell R-III Schools	1,494	2%	1,559	2%
Lee's Summit R-VII Schools	1,341	2%	1,412	2%
All Others	62,775	77%	62,525	77%
Total - 537 Employers	80,885	100%	80,647	100%

	2010		2009	
Employer	Covered Employees	Percentage of Total	Covered Employees	Percentage of Total
Special School District - St. Louis	3,021	4%	2,931	4%
Springfield R-XII Schools	2,132	3%	2,089	3%
Rockwood R-VI Schools	1,990	2%	1,893	2%
Parkway C-2 Schools	1,745	2%	1,656	2%
North Kansas City Schools	1,630	2%	1,497	2%
Columbia Public Schools	1,612	2%	1,594	2%
Francis Howell R-III Schools	1,573	2%	1,462	2%
Hazelwood R-I Schools	1,549	2%	1,578	2%
Ft. Zumwalt R-II Schools	1,493	2%	1,441	2%
Lee's Summit R-VII Schools	1,435	2%	1,358	2%
All Others	63,994	77%	63,490	77%
Total - 538 Employers during 2010 and 540 during 2009	82,174	100%	80,989	100%

Note: Schedules reflect total members reported at any time during the fiscal year.

PEERS Schedule of Covered Employees in the Top 10 Employers

Employer	2018 Covered Employees	2018 Percentage of Total	2017 Covered Employees	2017 Percentage of Total
Special School District - St. Louis	2,500	5%	2,504	5%
Springfield R-XII Schools	1,510	3%	1,499	3%
North Kansas City Schools	1,406	3%	1,406	3%
Rockwood R-VI Schools	1,523	3%	1,503	3%
Lee's Summit R-VII Schools	1,340	2%	1,291	2%
Ft. Zumwalt R-II Schools	1,352	2%	1,278	2%
Columbia Public Schools	1,183	2%	1,160	2%
Independence Public Schools	1,083	2%	1,083	2%
Parkway C-2 Schools	1,034	2%	1,054	2%
Wentzville R-IV Schools*	1,099	2%	-	0%
Hazelwood R-I Schools*	-	0%	959	2%
All Others	41,029	74%	40,305	74%
Total - 530 Employers	55,059	100%	54,042	100%

Employer	2016 Covered Employees	2016 Percentage of Total	2015 Covered Employees	2015 Percentage of Total
Special School District - St. Louis	2,501	5%	2,496	5%
Springfield R-XII Schools	1,540	3%	1,540	3%
North Kansas City Schools	1,397	3%	1,369	3%
Rockwood R-VI Schools	1,319	2%	1,230	2%
Lee's Summit R-VII Schools	1,294	2%	1,283	2%
Ft. Zumwalt R-II Schools	1,228	2%	1,232	2%
Columbia Public Schools	1,126	2%	1,081	2%
Independence Public Schools	1,111	2%	1,135	2%
Parkway C-2 Schools	1,060	2%	1,054	2%
Hazelwood R-I Schools	964	2%	1,004	2%
All Others	40,351	75%	40,627	75%
Total - 530 Employers during 2016 and 532 during 2015	53,891	100%	54,051	100%

Employer	2014 Covered Employees	2014 Percentage of Total	2013 Covered Employees	2013 Percentage of Total
Special School District - St. Louis	2,405	5%	2,386	5%
Springfield R-XII Schools	1,480	3%	1,488	3%
North Kansas City Schools	1,296	2%	1,246	2%
Lee's Summit R-VII Schools	1,207	2%	1,164	2%
Rockwood R-VI Schools	1,186	2%	1,179	2%
Ft. Zumwalt R-II Schools	1,180	2%	1,141	2%
Independence Public Schools	1,143	2%	1,065	2%
Columbia Public Schools	1,043	2%	982	2%
Parkway C-2 Schools	1,031	2%	1,041	2%
Hazelwood R-I Schools	960	2%	961	2%
All Others	39,568	76%	38,464	76%
Total - 532 Employers	52,499	100%	51,117	100%

**If an employer was not in the Top Ten for a year, their covered employees are included in "All Others."*

PEERS Schedule of Covered Employees in the Top 10 Employers (continued)

Employer	2012 Covered Employees	2012 Percentage of Total	2011 Covered Employees	2011 Percentage of Total
Special School District - St. Louis	2,481	5%	2,532	5%
Springfield R-XII Schools	1,478	3%	1,502	3%
Rockwood R-VI Schools	1,222	2%	1,206	2%
North Kansas City Schools	1,216	2%	1,203	2%
Lee's Summit R-VII Schools	1,171	2%	1,174	2%
Ft. Zumwalt R-II Schools	1,131	2%	1,128	2%
Parkway C-2 Schools	1,085	2%	1,106	2%
Independence Public Schools	1,071	2%	1,082	2%
Hazelwood R-I Schools	964	2%	977	2%
Columbia Public Schools	945	2%	906	2%
All Others	38,222	76%	38,146	76%
Total - 534 Employers	50,986	100%	50,962	100%

Employer	2010 Covered Employees	2010 Percentage of Total	2009 Covered Employees	2009 Percentage of Total
Special School District - St. Louis	2,584	5%	2,685	5%
Springfield R-XII Schools	1,473	3%	1,463	3%
North Kansas City Schools	1,229	2%	1,266	2%
Rockwood R-VI Schools	1,251	2%	1,248	2%
Lee's Summit R-VII Schools	1,198	2%	1,203	2%
Independence Public Schools	1,149	2%	1,167	2%
Ft. Zumwalt R-II Schools	1,131	2%	1,129	2%
Parkway C-2 Schools	1,091	2%	1,102	2%
Hazelwood R-I Schools	1,015	2%	995	2%
Columbia Public Schools	932	2%	950	2%
All Others	39,295	76%	39,754	76%
Total - 535 Employers	52,348	100%	52,962	100%

Note: Schedules reflect total members reported at any time during the fiscal year.

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